



THE M1903 SPRINGFIELD RIFLE

LEROY THOMPSON





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INTRODUCTION

In his foreword to the 1951 edition of his seminal work *The Book of the Springfield*, originally published 1932 as the first comprehensive book on the M1903 and based on experiences of its use during the first quarter-century after its adoption, E. C. Crossman gives a concise summation of the historical place of the M1903 Springfield:

A bit more than twenty-five years ago there appeared over the horizon of the American Rifleman a new arm, the new service rifle of the United States Army and called for the famous old Armory which developed it, the New Springfield. It was shortly to become not only the most accurate military and target rifle in the world, but the most popular rifle that ever fell into the hands of the civilian rifleman. As a military rifle it established new standards of accuracy. As a sporting arm it became the rifle by which other like arms were judged. (Crossman 1951: vii)

The M16 can now claim the title of longest-serving US military rifle as it nears a half-century since its adoption. However, it can be argued that the M1903 Springfield actually had a longer service life. Though the M1903 was superseded by the M1 Garand in US Army service in 1936, production continued during World War II. It remained in the sniping role through the Korean and Vietnam wars, and on US Navy ships into the early 1970s, where it was used to destroy mines. That puts the service life of the M1903 at almost 70 years.

The M1903 was not the first bolt-action rifle adopted by the US armed forces. By 1903 the Krag-Jørgensen had served the US Army for a little over a decade, and the M1895 Lee Navy and M1885 Remington-Lee had equipped the US Marine Corps (USMC) and Navy. It was the M1903, however, which was to incorporate the features deemed most desirable in a service rifle. These included a high-velocity cartridge and an action that

could handle it, plus the ability to load the internal magazine quickly with stripper clips. Two points should be noted about loading the M1903. The rifle was designed so that once the cartridges had been stripped from the clip, it was not necessary to remove it; the rifleman could just push the bolt forward and pop the stripper clip out of the rifle, thus speeding reload and re-engagement time. Furthermore, the M1903 could have its magazine loaded by inserting loose cartridges should there be no stripper clip available, and an additional sixth round could be loaded by hand into the chamber. US troops armed with the Krag-Jørgensen had faced Spanish troops armed with the M93 Mauser rifle during the Spanish–American War, and found the M93 incorporated many desirable features. The M1903 would incorporate so many of these favorable attributes of the M93 that, after a successful lawsuit brought by Mauser, the US government had to pay the German company royalties on the M1903.

Equally as important as the development of the M1903 was the development of the .30-06 cartridge, which would become the most popular US rifle cartridge of all time – though that title might be challenged by the .30-30 Winchester cartridge widely used in lever-action hunting rifles, or more recently by the 5.56mm NATO/.223 Remington cartridge. Still, the .30-06 round was retained when the M1 Garand was introduced, and was the standard US rifle and medium-machine-gun cartridge throughout the two world wars and Korea.

By the time the USA entered World War I in April 1917, almost 850,000 M1903s had been produced. Though this number would have been sufficient for the peacetime US armed forces, it was not enough to meet wartime needs, despite increased production. As a result, another rifle, the M1917 Enfield, a modified version of the British Pattern 1914 Enfield, was produced in .30-06 caliber to supplement the stocks of M1903s. By the end of 1919, 1,508,500 M1903 rifles had been produced at Springfield Armory, Massachusetts, and Rock Island Arsenal, Illinois.



A World War I-era squad of USMC recruits armed with M1903s assumes the "right shoulder arms" position at the Marine Barracks, Washington, DC. They appear to be wearing 1912 winter service dress. (NARA)

Just as US Doughboys had developed affection for the M1911 pistol during the war, they had also found the M1903 accurate and reliable under combat conditions. In fact, US soldiers and especially Marines had developed a reputation for delivering accurate fire with their M1903s. The M1903 had also proven its accuracy in US service-rifle competitions from the time of its introduction. Particularly noteworthy in regard to the M1903's accuracy was the fact that standard military-issue M1903s could often shoot as accurately as other rifles specifically designed for competition. The desire of competitors and returning Doughboys to own an M1903 was satisfied to some extent after World War I by the release of surplus M1903 rifles to competition shooters at the National Matches and to local competitors through some gun clubs.

One result of civilian sales was that the M1903 became an extremely popular hunting rifle, often in "sporterized" versions. Perhaps the most famous user of the M1903 for sporting purposes was President Theodore Roosevelt. All North American big game and most, if not all, African dangerous game have been taken with the M1903 rifle. Many lawmen also used the M1903 Springfield for its striking power and range. At least

some Texas Rangers favored the M1903, though some also used the M1895 Winchester lever-action rifle in the M1903's .30-06 chambering. Reportedly, it remained popular with alcohol-enforcement agents from Prohibition into the 1960s for long-range engagement of moonshiners protecting their stills.

Between World War I and World War II, the M1903 saw substantial combat with the US Marines in China and in the "Banana Wars" in Panama, Haiti, Cuba, the Dominican Republic, and Nicaragua. As World War II loomed in Europe the M1903 was supplanted by the M1 Garand, with production of the M1903 ceasing at Springfield Armory in 1938. However, in 1942, production of the M1903 resumed at Remington and, in 1943, at Smith Corona. Remington initially produced the M1903 but later switched to production of the M1903A3, which included modifications to ease production, but Smith Corona produced M1903A3s only. Also produced by Remington was the M1903A4 sniper version of the M1903.

This patriotic World War I poster illustrates the iconic status of the M1903 rifle and the M1911 pistol. (NARA)



Many of America's earliest battles of World War II were fought primarily with M1903s, as not enough M1 Garands had then been produced to arm units in the Philippines. The US Marine Corps retained the M1903 longer than the Army and the Marines were armed with it when they landed on Guadalcanal in August 1942. However, as M1 Garand production increased, the last M1903A3s were produced in 1944 (the Smith Corona and Remington contracts were canceled in February that year). Even after the Garand entered service, Army and Marine units retained M1903s and M1903A4s for launching grenades until a grenade-launcher became available for the M1 Garand. (Though the M7 grenade-launcher for the Garand was standardized in February 1943, it didn't really reach the front-line troops in significant numbers until a year later.)

The M1903 also had a long history as a sniper's rifle. During World War I, some M1903 rifles were fitted with Warner & Swasey "Musket Sights" and Winchester A5 telescopes, and used for sniping. The best-known M1903 sniping rifle, however, is the World War II M1903A4, which was based on the M1903A3. Although interesting to collectors, the M1903A4 was not a particularly successful sniping rifle, and the USMC used their own M1903A1 rifles fitted with 8x Unertl telescopic sights.

The Marines continued to use the M1903A1 sniping rifles through Korea and into the Vietnam War. M1903A3 rifles remained in service with the US Navy aboard ships, and some remained in National Guard armories for many years after World War II. Because the M1903 balances well, many color guards and drill teams continued to use this version of the Springfield M1903 long after it was out of use as a battle rifle.

"Sporterized" M1903 Springfields are still used for hunting in some parts of the USA, often by the third generation since the rifle came into the family. The author had a friend at university during the 1960s who hunted deer with a sporterized M1903 passed down from his grandfather, and it is quite likely that the weapon is now in use with the fourth or fifth generation.

If the memoirs of World War I soldiers are examined, many quite often actually preferred the M1917 Enfield to the M1903 Springfield or, in some cases, had only used the M1917. Nevertheless, it is the M1903 Springfield that most associate with the US Army and Marine Corps of World War I and during the years leading up to World War II. Its rich history at the US National Matches at Camp Perry, Ohio, has continued its appeal for many Match shooters. Military weapons collectors especially like the M1903 due to its long history in the US armed forces and the number of variants that were produced.

For the author, the M1903 has a special appeal because the first US military rifle he purchased and shot was an M1903. Hopefully, he will be able to communicate some of his appreciation of the M1903 in this volume.



DEVELOPMENT

A new rifle for a new round

REPLACING THE KRAG

During the Spanish–American War (1898), the Model 1892 and 1896 Krag-Jørgensens in use by US troops proved inferior to the M93 Mauser with which the Spanish were armed. One of the major deficiencies of the Krag-Jørgensen compared to the M93 was the faster speed with which the latter could be loaded using stripper clips. (Note that the term “clip” is generally used, but “charger” is actually the correct term.) The Krag had a self-contained rotary magazine that held five rounds. Ballistics of the .30-40 Krag-Jørgensen cartridge versus the 7mm M93 round were inferior as well. The M93’s 7mm round had a flatter trajectory and was 300fps faster, giving greater range. It could also be loaded more quickly due to the magazine’s ability to be loaded by stripper clips. At the battle of San Juan Hill, 750 Spanish regular troops armed with the M93 Mauser inflicted 1,400 US casualties in minutes because their weapons outranged the US rifles.

Although it would have been possible to modify the Krag-Jørgensen design for the use of stripper clips, the single locking lug on its bolt would have made it difficult to increase the power of the cartridge. As a result, after the Spanish–American War, the Chief of Ordnance issued a requirement for a new, more powerful cartridge and a rifle chambered for it.

A new .30-caliber rimmed cartridge firing a round-nosed bullet was developed in 1900, along with an experimental magazine rifle to fire it. This experimental rifle owed much to Mauser’s Gew 98, as it used two locking lugs toward the front of the bolt as well as an additional safety lug to allow the use of more powerful ammunition and loading using stripper clips. The rifle also incorporated a magazine cutoff so that it could be operated as a single shot with rounds in the magazine held in “reserve.” The theory was that an infantryman would carefully load each round into the chamber for aimed fire, thus conserving ammunition,

but when faced with an attack could switch to using the magazine for faster fire; the Krag had also had this feature. Aside from the action and cartridge, the rifle retained most characteristics of the Krag-Jørgensen.

The US War Department received the experimental rifle and cartridges in August 1900, and these were passed to a board of Ordnance officers at Springfield Armory for evaluation that October. Among their recommendations were that the magazine be designed so that cartridges would be staggered – making the magazine shorter and thus eliminating the need to extend below the stock – and that the cartridges be rimless to allow them to be loaded more easily from the clips. The clip was designed so that it could be loaded from either end to facilitate rapid loading without fumbling in combat. Changes were also suggested to the magazine cutoff – for example, altering it so the magazine could be loaded while the cutoff was in the “off” position. A request was made for two new rifles to be submitted, one of which incorporated the magazine cutoff and one of which did not.

A design without cutoff does not appear to have been submitted, but two examples of a new design with improved cutoff and firing a rimless cartridge were (Campbell 1978: 4). One version had a rod bayonet of the type that had been used on the M1889 “Trapdoor” Springfield, while another had a blade bayonet, as had the 1900 experimental rifle. Between them, these rifles offered the basis for the design that was recommended for adoption on June 19, 1903, as the “U.S. Magazine Rifle, Cal. .30, Model of 1901.”

The M1901 had a 30in barrel with a 1-in-10 twist. A front blade (post) sight and rear ramp sight along which the notch could slide for elevation were attached to bands; a rod bayonet that extended 15.25in beyond the muzzle when in use fitted into the front stock beneath the barrel and was retained by a plunger catch. The buttstock retained the Krag-Jørgensen configuration, with a straight rather than a pistol grip. Weight was about 9.5lb, as opposed to the M1896 Krag, which was 8lb 7oz. The Secretary of War, Elihu Root, approved manufacture of 5,000 of the M1901. If the rifle proved to be satisfactory after this initial production, Springfield Armory would switch the machinery used to produce the M1898 Krag-Jørgensen rifle and carbine over to production of the M1901.



The M1903 proved its accuracy in competition early in its issuance. Shown here are men of the US Army Rifle Team at the 1911 National Trophy Team Matches at Sea Girt, New Jersey, which were also known as the “Dogs of War” Matches. In 1911, the Marines beat the Army for the Dogs of War Trophy. (Springfield Armory National Historic Site)

TOP

The Krag-Jørgensen rifle, which after serving only slightly over a decade was replaced by the M1903 Springfield. This example appears to have a US Mills web sling and an M1895 Krag bayonet. (Rock Island Auction Service)

**MIDDLE**

The original M1903 rod-bayonet rifle as produced until early 1906. They were replaced at least partially due to Theodore Roosevelt's objection to the rod bayonet being too fragile for combat use. (Martin Floyd)

**BOTTOM**

The M1903 rod-bayonet rifle with the bayonet extended. Springfield Armory had produced 76,689 rod-bayonet rifles by the time they were discontinued. These were converted to M1905 configuration to use the new blade bayonet. Rock Island Arsenal had also produced the parts for approximately 18,000 rod-bayonet rifles, but it is believed they were converted to blade-bayonet configuration before they were accepted by the Ordnance Department. (Martin Floyd)

However, Brig Gen William Crozier, Chief of Ordnance in April 1902, determined that the dual production of the M1901 and Krag-Jørgensen concurrently was less desirable than producing 100 model-shop examples of the M1901 for testing prior to beginning actual production. These 100 rifles would also be used to evaluate the rod bayonet, stripper clips, sling, bandoleers, and cartridge belts that would be used with the rifle.

As a 41.2in-long carbine version of the Krag-Jørgensen had been produced along with the 48.9in-long rifle, test M1901 rifles were produced in barrel lengths of 22in, 24in, 26in, and 30in to evaluate the potential for an M1901 carbine as well as rifle. The barrel's twist was changed to 1-in-8 on the 100 test rifles as well. The faster twist would allow the heavy 220-grain bullet used in the .30 cartridge to be stabilized more effectively, thus enhancing accuracy.

On February 16, 1903, a board of US Army personnel was convened at Springfield Armory to evaluate the new rifle. Officers were drawn from cavalry, infantry, and Ordnance, while NCOs who were skilled riflemen were detailed to assist in firing and demonstrations. After initial firing tests, officers visited Army posts around the USA to demonstrate the rifle and receive comments from the troops. One recommendation that emerged from the trials and demonstrations was that the rifle be produced with a 24in barrel, thus allowing it to be used by both infantry and cavalry. Other recommendations included extending the handguard so troops would not burn their hands on a hot barrel, and that the rear sight be moved back and more firmly secured. Additionally, the mounting point for the front sling-swivel was moved rearward by 2in; the magazine follower was lengthened by 0.2in at its rear so that, when loading with an empty magazine and the cutoff set to "off," the follower could not become canted and block the bolt's operation; and the bolt's safety lug was raised, a change that necessitated raising the receiver bridge. The rod bayonet was retained but was increased slightly in diameter, from 0.28in to 0.30in, for greater strength. Other small cosmetic changes were recommended as well.



TOP

A close-up of the rod bayonet. Although the rod bayonet was a clever idea in that it could be stowed and saved an infantryman from having to carry it on his person, it functioned poorly as a bayonet. (Martin Floyd)

MIDDLE

A top view of the M1903 rod-bayonet rifle showing the original type of rear sight. The M1903 rod-bayonet rifle's tangent sight was very similar to that used on the 1898 Krag rifle; this example's sling is the M1903 leather sling, which was basically the same as the Krag leather sling. (Martin Floyd)

BOTTOM

A close-up of the front sight and bayonet-retention latch for the M1903 rod-bayonet rifle. (Martin Floyd)

INTO MASS PRODUCTION

The adoption of the rifle with the recommended changes was approved by the Secretary of War, Elihu Root, on June 19, 1903. It was designated "United States Magazine Rifle, Model of 1903, Caliber .30." Springfield Armory was ordered to prepare tooling for the production of 225 M1903 rifles per day, while tooling required to produce 125 rifles per day was to be prepared for the Rock Island Arsenal in Illinois. The production for Springfield Armory was soon upped to 400 rifles per day. These production figures were based on the operation of one eight-hour shift per day.

On first examination a bolt-action rifle such as the M1903 seems quite simple compared to auto-loading rifles, so it is easy to forget that M1903 rifles were carefully precision-machined and held to very close tolerances. There were, for example, 1,260 gauges used in manufacturing and inspecting the rifle. Producing the receiver required 82 setups for machining and the bolt 40 setups. The bolt also required hand filing. As of 1917, the M1903 had a total of 93 parts. The 24in barrel was standardized for the M1903, but it was found that the powder used in the .30 cartridge burned so hot that it eroded the barrel very quickly when the 1-in-8 twist was used; hence, production M1903 rifles used the original 1-in-10 twist.

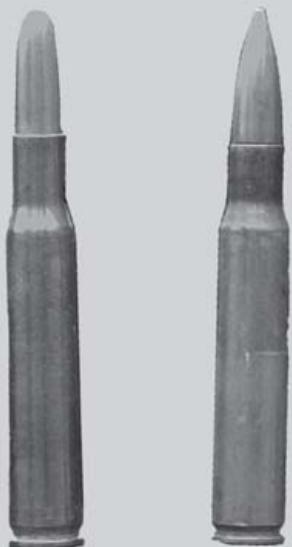
Tooling for the M1903 was prepared quickly and some more efficient production methods were developed. For example, in the Springfield Armory annual report for the fiscal year ending June 30, 1903, it is noted that, through the use of solid reamers rather than the chip reamers¹ formerly used during 1903, the quality of barrels was enhanced while production costs were lowered. It is interesting to note that barrels were still being produced in the "water shops," using equipment powered by water wheels. Springfield Armory began quantity production in November 1903 and, by mid-1904, had produced just over 30,500 M1903 rifles.

¹ Chip reamers are pulled through a hole rather than pushed, as is normally the case

M1903 service cartridges

Of course, to use the M1903 effectively, the troops needed proper ammunition. As a result, changes were made to the ammunition throughout the period when the weapon was used, often in response to combat conditions faced by US troops. The first cartridge developed for the then-prototype 1900 rifle used a rimmed case very similar to that of the .30-40 Krag-Jørgensen. However, as the ability to load from clips was deemed important, the rimless "Cartridge, Ball, M1901" was developed. (Rifles loaded from clips benefit from rimless ammunition as it is less likely to catch or bind during the loading process.) This was the cartridge used in testing the rifle that would become the M1903. A 220-grain bullet with a slightly tapered round nose was adopted with the M1901 cartridge case as the "Cartridge, Ball, Cal. .30, Model of 1903." Early in 1904, the muzzle velocity of the .30 round used in the M1903 was reduced from 2,300fps to 2,200fps to help counter barrel erosion. During accuracy experiments carried out by Springfield Armory, it had been found that, using the .30-03 load, erosion of the barrel caused accuracy to degrade by about 10 percent after 1,200 rounds and up to 50 percent after 3,500 rounds (Brophy 1991: 132).

After the French adoption of a boat-tailed, pointed bullet in 1898 and the German development of a flat-based, pointed "spitzer" bullet (from the German *Spitzgeschoß*, or "pointed bullet"), both of which offered better aerodynamics and greater stability at longer ranges, US Ordnance personnel realized in 1904–05 that the heavy,



At left, the .30-03 round for which the M1903 was originally chambered; note the rounded bullet. At right, the .30-06 cartridge that replaced the .30-03; note its pointed spitzer bullet. (Author)

blunt-nosed bullet used in the .30-03 cartridge was already obsolete. Because the chambers of the .30-03 rifles were designed for the longer 220-grain .30-03 bullet, it was difficult to get good results with shorter, ballistically more efficient cartridges. Late in 1904, US Ordnance personnel began experimenting with a 150-grain spitzer bullet with a flat, rather than boat-tail, base for the M1903. Two major problems existed with the experimental cartridge: the chamber would have to be changed, requiring the 200,000 rifles that had been made by that point to be re-chambered, and the nitroglycerin powder that was tested eroded the barrels very quickly. It was deemed that re-chambering the barrels could be accomplished relatively inexpensively, however, and in 1906 a new powder, DuPont "Pyro," was developed that burned cooler, thus increasing barrel life more than four times over. As a result, in October 1906, the adoption of a new cartridge firing a 150-grain spitzer was approved as the "Cartridge, Ball, Caliber .30, Model of 1906" and the .30-06 cartridge that would be used in US service rifles through the 1950s came into existence.

After World War I, as a result of complaints from US machine-gunners about lack of sufficient range of the .30-06 round, experiments began to develop a longer-range cartridge that would be effective in the M1903 rifle, as well as the Browning Automatic Rifle and M1917/M1919 machine guns. Cartridges loaded for National Match competitions in 1920, 1921, and 1922 were used to test various bullet designs. Thanks to various tests, the M1 Ball bullet was adopted in 1925. This 172-grain bullet had a spitzer point with a boat tail and a gilding-metal jacket. Its 2,700fps muzzle velocity gave an extreme range of 5,900yd, compared to 3,400yd for the M1906 Ball previously used.

During the 1930s, it became apparent that for use on many rifle ranges, especially National Guard ones, the M1 Ball actually had too much range. As a result, the M2 Ball load was developed, which used a 150–151-grain bullet at 2,805fps. Under optimal conditions, maximum range was about 3,500yd. Although originally intended for training use on ranges with less impact area, the "Cartridge, Ball, Cal. .30, M2" was standardized for the US Army on November 9, 1939, and served as the principal US .30-06 round throughout World War II. One consideration had been that the less-flat-shooting M2 round was actually better for use in machine guns firing searching fire on reverse slopes.

Various special-application .30-06 loads were developed prior to World War I, including the M1906 Blank cartridge, used for field training without the risk of wounding someone with a projectile; the lightly loaded "Guard Cartridge"; the Dummy cartridge, used for training in loading and operating of the rifle in armories or elsewhere as it was completely inert; and the M1909 Blank cartridge, used for field-training exercises. Also developed were blank cartridges designed especially for launching grenades.

Once the USA entered World War I, other special-purpose ammunition was developed. The M1917 Armor Piercing (AP) round, though using a steel core, had a thin layer of lead that protruded from the jacket. Once the round was sent to France and put into use, the Germans complained that it was an expanding bullet and contravened the 1899 Hague Convention. It was replaced by the M1918 AP round, which eliminated the soft point. The M1917 Tracer round was used by US troops throughout the war. Its tracing compound consisted of magnesium and barium peroxide that burned white for about 700yd.

The original US Incendiary round, the M1917, was based on the British "Buckingham" bullet used against Zeppelins. These rounds were filled at the tip with yellow phosphorus, which was designed to ignite when leaving the barrel and burn for about 350yd. Ballistically, the M1917 Incendiary round was not as effective at longer ranges as it used a flat bullet tip designed to initially break up if it hit the structure of a Zeppelin. The M1918 Incendiary round used a more efficient pointed bullet.

Other .30-06 loads developed after World War I included the M1922 AP round, which would penetrate .25in of armor at 500yd. This load was followed in 1934 by the M1 AP round, which would penetrate .5in of armor at 200yd. The M1 and M1A1 AP rounds, standardized in October 1938, had various production problems, including bullets that were loose in their cases. As a result,

on August 17, 1939, the M2 AP round was standardized. With some slight improvements such as the inclusion of a crimping cannelure, the M2 AP round was basically very similar to the M1922 AP round.

Between the wars, improvements were also made in the tracer round. The M1923 Tracer round, using red tracing compound, burned farther than its predecessor, to about 850yd. An M1924 Tracer was basically the same, but with red or green tracing compound. Eventually, on July 29, 1926, the M1 Tracer cartridge was standardized, remaining in use throughout World War II. It originally traced for 1,300yd, though, as used later with red tracing compound, distance was more like 750yd.

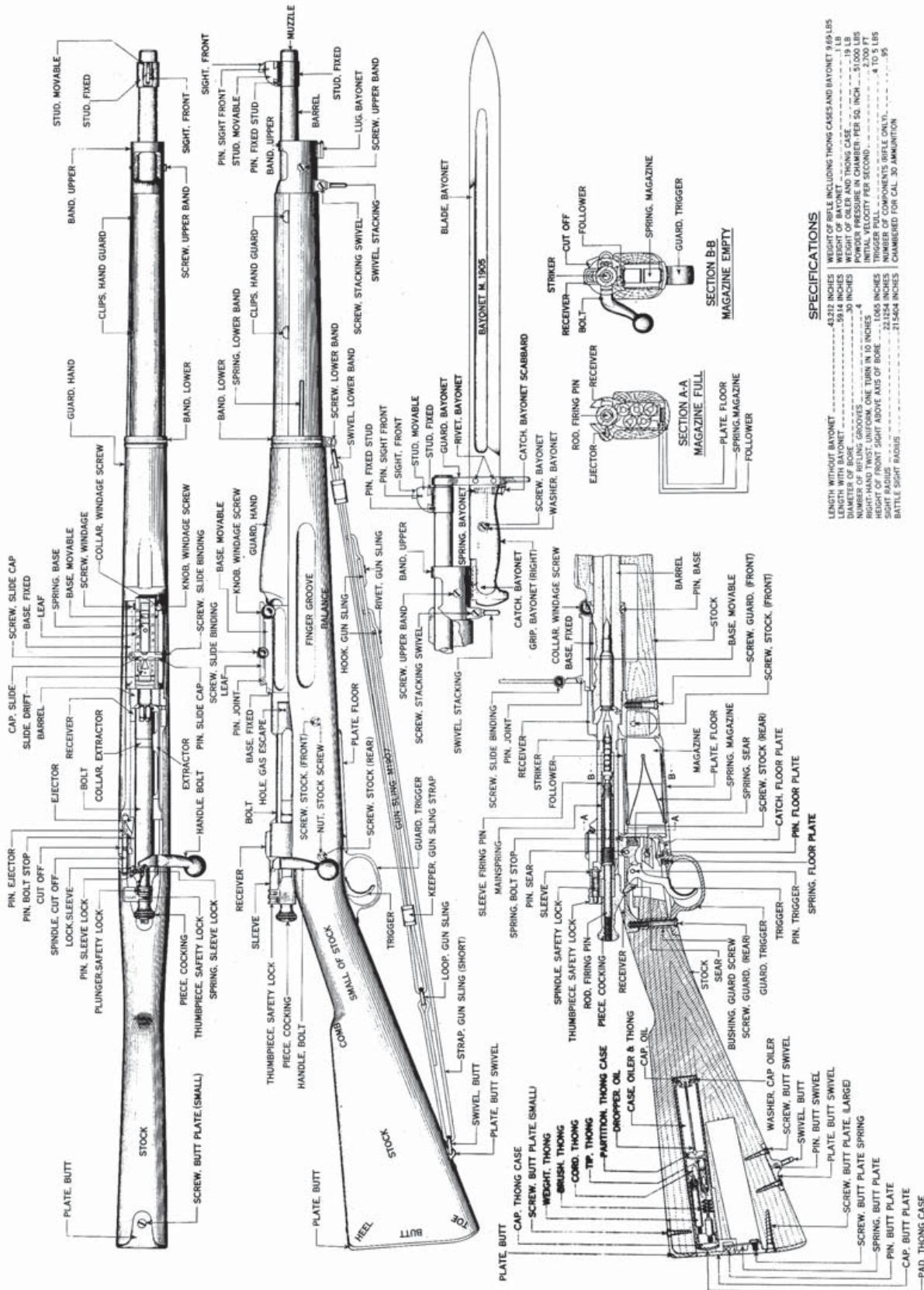
Although the M1 Incendiary round was standardized on September 18, 1941, it was not normally used by infantry units but rather by aircraft. The "Cartridge, Rifle Grenade, M3" was standardized for use the same month, with the M1 launcher used on the M1903. Each rifle-grenade came with an M3 cartridge stored in the base tube.

Various other .30-06 loads were developed during World War II, including Armor Piercing Incendiary (API), but were designed primarily for use in aircraft machine guns. The three commonest rounds encountered, other than the M2 Ball, were marked on the bullet tip for quick identification as follows: AP – black, Tracer – red or orange, Armor Piercing/Incendiary (API) – silver.

Early in 1904 changes were made to the safety lock, cocking piece, and bolt sleeve, in order to decrease wear. Late in 1904 a modification to the magazine follower was made as well. These changes were minor and did not slow production. The modifications to the safety were to a large extent dictated by the contemporaneous change in the infantry drill regulations used with the M1903. According to the Springfield Armory annual report for fiscal year 1903–04:

As the new Infantry Drill Regulations provide for carrying the rifle loaded and locked for safety, the "ordering of arms" brings the face of the safety lock so violently against the edge of the notch in cocking the piece as to cause a burring of the latter. It is as though it had been struck – as in fact it has – a violent blow. The effect of this burring is sometimes to prevent free movement in the sleeve. The most serious trouble likely to arise from this burring or setting back of the metal on the edge of the safety lock notch is the possibility of the soldier pulling the trigger whilst the piece is loaded, cocked and safety lock set. In such a case, the sear becomes disengaged from its notch, the firing mechanism moves forward the amount removed from the edge of the safety lock notch preventing the return of the sear to its place in the sear notch. When, therefore, the safety lock is turned back to "ready," the firing pin going forward fires the cartridge. (Brophy 1991: 130)

UNITED STATES RIFLE CALIBER .30 M1903 - BAYONET M1905



To help get production running at Rock Island Arsenal, some experienced workers were transferred from Springfield Armory. As a result, Rock Island Arsenal began production of the M1903 in May 1904, and had reached its goal of 125 rifles per day by January 1905. With production from both Springfield Armory and Rock Island Arsenal, sufficient M1903 rifles had been produced to equip the 100,000 or so men of the US Regular Army by January 1905.

A new bayonet and rear sight

Although the rod bayonet had been incorporated into the M1903 due to the ease of stowing it in the rifle's forestock and its usefulness in clearing a stuck case or other obstruction from the bore, its use in close combat was questionable. President Theodore Roosevelt – who never hesitated to express his opinion – was very critical of the rod bayonet in a January 4, 1905 letter to the Secretary of War (later President), William Howard Taft. Reports of extensive use of the bayonet in the Russo–Japanese War (1904–05) also caused a reevaluation of the rod bayonet. As a result, production of M1903s incorporating this feature stopped in January 1905 and, during that April, the 16in M1905 blade bayonet was adopted instead. A bayonet lug with a plunger release was added to the M1903 rifle.

During the halt in production while the new bayonet was adopted, a board of US Army officers also considered an improved rear sight. Adopted as the M1905 aperture or “peep” rear sight, it incorporated a fold-up “leaf” featuring a scale graduated to 2,400yd, though, in actuality, the aperture could only be raised to the 1,900yd mark. When the fold-up portion of the scale was down, the rear “battle sight” (an open notch) could be used instead, allowing faster target acquisition.

The range of the battle sight was listed at 400yd with the leaf fully down in the 1906 edition of the *Description and Rules for the Management of the United States Rifle, Caliber .30, Model 1903*. However, in the 1908 edition, range for the battle sight was listed at 530yd and, in the 1911 edition, at 547yd (Brophy 1996: 454). The latter figure came to be the accepted distance. Yet, given that the battle sight would be used most often for quick-reaction “snap shooting,” the distance seemed excessive to many. In an attempt to develop a more usable battle sight, in 1916 the School of Musketry – at that time a solely US Army facility located at Fort Sill, Oklahoma – and military shooting teams experimented with

OPPOSITE

A diagram of the M1903 prepared by the Office of the Chief of Ordnance in the 1905 configuration after the elimination of the rod bayonet. Development of the M1903 was evolutionary, based upon experience in the field and – by World War II – upon the ability to produce M1903s faster and less expensively to meet immediate demand. (NARA)

LEFT

The M1903's safety in the “on” position. (Author)

RIGHT

The M1903's safety in the “off” position for firing. (Author)



LEFT

A view of the M1905 rear leaf sight flipped up and set for 1,400yd. (Author)

**RIGHT**

The M1905 sight in the folded-down position showing the notched "battle sight." (Author)

a two-position battle sight, which could be set for 300yd or 547yd (Brophy 1996: 454). The commandant of the School of Musketry, Gen William Mann, recommended adopting this two-position version, but the conversion was considered too costly.

Rifles that had been issued up to this point were called in to be converted for the M1905 blade bayonet and to incorporate the improved M1905 sights. Reportedly, somewhere around 75,000 M1903s had been manufactured up to the point the rod bayonet was discontinued. As a result of the conversion of these early rifles, rod-bayonet versions of the M1903 are highly sought after by collectors today.

Conversions were carried out rather quickly. In the 1907–08 Springfield Arsenal annual report, it is noted that, during that fiscal year, 23,000 rod-bayonet M1903 rifles were altered to take the M1905 blade bayonet, chambered for the new 1906 ammunition, and fitted with the new M1905 rear sights made necessary by the flatter trajectory of the .30-06 round. Additionally, 55,296 M1903 blade-bayonet rifles were chambered for the 1906 ammunition and equipped with the new sights (Brophy 1991: 142). A further 81,491 M1903 rifles were “cleaned,

TOP

When the magazine cutoff was in the “on” position as shown here, the bolt was allowed to travel all the way to the rear to allow the follower to push a new cartridge into position for loading. (Author)

**BOTTOM**

When the magazine cutoff was in the “off” position as shown here, the bolt was not allowed to travel far enough to the rear to allow the follower to rise to place a cartridge in front of the bolt, so that single cartridges could be loaded while keeping the loaded magazine in “reserve.” (Author)



Patent problems

In early 1907 the US Ordnance Department faced another claim arising from the German firm Deutsche Waffen- und Munitionsfabriken Aktien-Gesellschaft (DWM), this time alleging that the .30-06 bullet infringed their patent. The Ordnance Department refused to recognize the claim, resulting in a suit filed by DWM's US representative on July 18, 1914. Germany entered World War I before the suit could be heard by the US Court of Claims and it was set aside as a consequence. When the USA entered the war against Germany, the patent was seized by the US Alien Property Custodian, resulting in the suit being dismissed by the US Attorney General. The matter was not over, however, as on July 2, 1921, a tribunal that had been appointed to settle claims against the USA by German and Austrian nationals ruled that DWM should be awarded \$300,000 plus \$112,520.55 in accumulated interest. Thus, the USA paid the German firm for the bullets it had fired at German soldiers during the war.

It had been determined as early as 1904 that five Mauser patents were infringed by the M1903 rifle and two by its stripper clip. A contract was signed on May 5, 1905, in which it was agreed that Mauser be paid royalties of 75 cents per rifle and 50 cents per thousand clips until a total of \$200,000 was reached. Payments were made only on rifles and clips manufactured subsequent to the agreement, and the total of \$200,000 was reached in July 1909.

repaired, chambered, and re-sighted for Model 1906 ammunition,” according to the 1908–09 report (Brophy 1991: 145). Conversions seem to have been completed by fiscal year 1909–10, as the report for that year lists 27,689 rifles “cleaned, repaired, chambered, and re-sighted for Model 1906 ammunition” during that time period (Brophy 1991: 147).

Manufacturing developments

The 1910–11 annual report offers a couple of interesting statistics. Projected cost during the 1912 fiscal year for an M1903 rifle with bayonet and “appendages” was \$14.61. This is equal to about \$325 in 2012, which seems quite reasonable compared to \$1,032 per M4 carbine in the last US Government contract awarded to Colt in 2005. Also of note, at the end of fiscal year 1911–12, 171,893 M1903s were stored at Springfield Armory (Brophy 1991: 151). By 1913, sufficient M1903 rifles had been produced that production ceased at Rock Island Arsenal, while Springfield Armory continued production. Production would resume at Rock Island Arsenal in February 1917 to meet increased demand due to the US entrance into World War I.

World War I-era Marines train in bayonet combat with their M1903s. At left can be seen the thrust with rifle locked against the hip; at right is the counter. (NARA)



A view of the hole drilled into the receiver to allow escape of gas should a case rupture, and the cross bolt which strengthened the stock. (Author)



The process for forging M1903 receivers and bolts was initially the same as used for the Krag-Jørgensen rifle. During the hardening process some receivers and bolts could become brittle; however those likely to fail were normally eliminated by the firing of a proof cartridge of 70,000psi (pounds per square inch). (The standard .30-06 round produced 50,000psi.) However, when production was increased dramatically at Springfield Armory and Rock Island Arsenal during World War I and many inexperienced workmen were hired, problems with the heat-treating became apparent. Increased production of .30-06 service cartridges by new contractors resulted in poorer quality control as well.

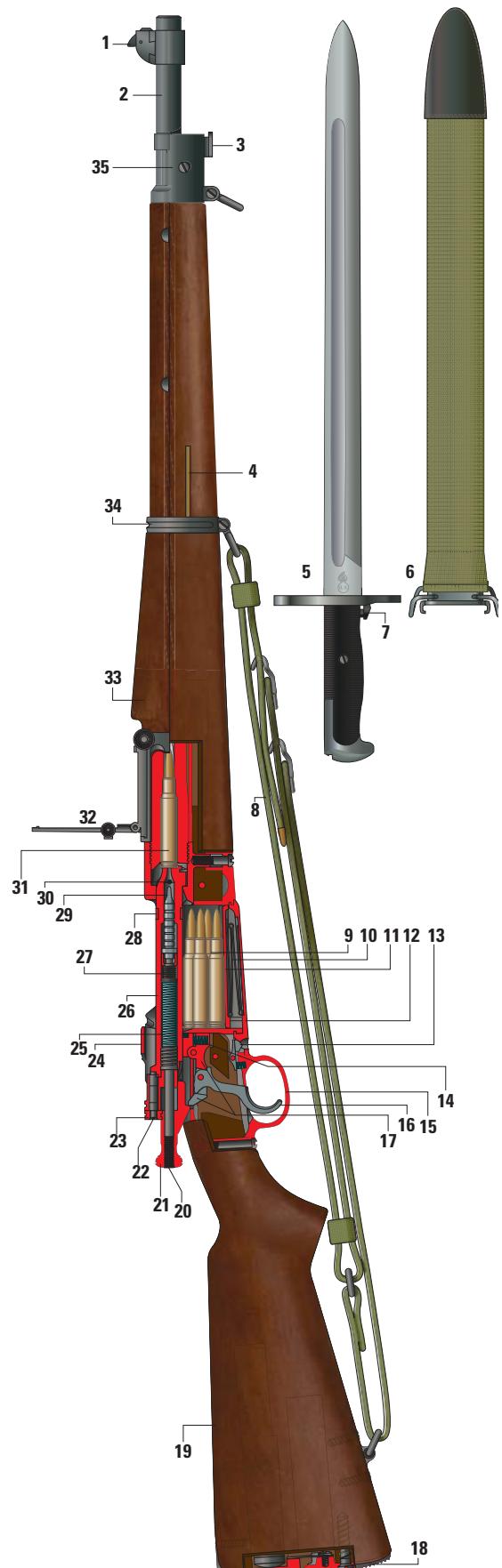
As a result, instances of receivers bursting came to the attention of Capt Julian Hatcher, the Chief of the Department of Experiment at Springfield Armory. Hatcher pulled receivers off of the production line, put them into a vice, and hit them with a hammer. When several of them shattered, he concluded that there were serious problems with the heat-treatment process. As a result, a team of metallurgists was called in to revise the process. In addition to ensuring more care in the forging process, a new heat-treatment process based on that used on Mauser's Gew 98 was adopted in 1918, which produced a hard surface but a tough, non-brittle interior. The process is often designated "double-heat treatment" and included: heating the receiver in bone to 1,500 degrees Fahrenheit for 2½ hours then quenching in oil, reheating in a salt bath to 1,300 degrees Fahrenheit for five minutes then quenching in oil, and finally drawing in an oil bath at 350 degrees Fahrenheit and air cooling. This was followed by a hardness test. The process described above was used by Springfield Armory. Rock Island Arsenal also developed a variation to perform their own double-heat treatment. Actions produced using this process stood up to proof loads of 125,000psi – two and a half times the standard .30-06 load.

The exact number at which receivers started receiving the new heat-treating process is not known, though it is generally given at between 750,000 and 780,000. However, it is possible that at least a few receivers with the old heat treatment were used at Springfield Armory with serial numbers around 800,000. It should be pointed out, too, that not all

THE M1903 SPRINGFIELD EXPOSED

U.S. Rifle, Cal. .30, Model of 1903A3

1. Front sight
2. Barrel
3. Bayonet mount
4. Lower band spring
5. M1905 bayonet
6. Scabbard
7. Scabbard catch
8. M1907 sling
9. Magazine
10. Magazine spring
11. Magazine follower
12. Floor plate
13. Floor plate catch
14. Sear spring
15. Trigger guard
16. Trigger
17. Sear
18. Buttplate
19. Stock
20. Firing pin rod
21. Cocking piece
22. Safety lock spindle
23. Safety lock thumb piece
24. Receiver
25. Main spring
26. Bolt
27. Firing pin sleeve
28. Extractor collar
29. Firing pin
30. Gas escape hole
31. Cartridge in chamber
32. Rear sight
33. Hand guard
34. Lower band
35. Upper band



The M1903A3 was a slightly simplified version of the M1903 manufactured during World War II. See page 30.

receivers produced before the double-heat treatment process would fail, as many served throughout World War I and later with no problems. As a fix, Hatcher (who ended his career as a major general) developed a simple modification for M1903s with the early receivers. When overhauled, a hole would be drilled in the receiver adjacent to the breech. Designated the “Hatcher Hole,” it was designed to relieve gas pressure in case of a ruptured case.

A noteworthy change to the M1903, designed to strengthen the stock, had occurred around 1910 when a reinforcing bolt or stud was added to the stock. An additional reinforcing bolt was added after 1917, reportedly because of damage to stocks that occurred firing the Vivien-Bessières (VB) rifle grenade during World War I.

In August 1918, Rock Island Arsenal began manufacturing M1903 actions using nickel steel of the type that had been used to produce the M1917 Enfield. Though generally not considered quite as strong as the double-heat-treated receivers, those using nickel steel were easier to produce and were still quite strong. In fact, as of late 1928, Springfield Armory began using nickel-steel forged receivers.

Specialized M1903s: early sniping and trench-warfare modifications

Prior to and during World War I, experiments were carried out with various devices to improve the combat effectiveness of the M1903 rifle. As early as June 1903, a board had been convened at Springfield Armory to consider telescopic sights for the rifles of skilled marksmen. This board recommended that various types of telescopic sights be tested and, once the best had been determined by troop trials, a sufficient number should be purchased to equip those marksmen who had qualified as “Expert.”

The first optical sight to be adopted was that designed by Warner & Swasey. To keep the design compact, it was of prismatic instead of direct-vision type. It was also designed to be mounted offset so that the magazine of the M1903 could still be clip fed. The resulting sight was tested early in 1907 by the Infantry Board and found to meet requirements; however, it was priced at \$80, which was four times the cost of the M1903 rifle at that time. As a result, a simplified model that could be produced at about half of that price was developed and tested in 1908. It was approved as the “Telescopic Musket Sight, Model of 1908.”

In 1909, 1,000 M1908 sights were ordered and delivered to Springfield Armory. These were mounted on selected M1903 rifles with star-gauged² barrels, which indicated uniformity of the rifling. Some of the first rifles fitted with the M1908 sight were issued to selected “Expert” riflemen for trials and received very favorable reports, though many suggested that the sight needed to be mounted further forward and that the rubber eyepiece needed to be softer. After these changes were made, two rifles fitted with the improved M1908 sight were issued in 1910 to the best marksmen in each

The “P” in a circle was used to indicate that the M1903 had been proof fired. (Author)



² Star-gauged barrels were those measured with an instrument that checked barrel and groove diameters the full length of the barrel for uniformity; such barrels were marked with a star on the muzzle



cavalry troop or infantry company. Once in service, it became apparent that, though the M1908 sights were 6x, they had such short eye-relief and poor light-gathering capability that troops requested an improved version. Crossman gives a concise summary of the problems with the M1908 sight:

Back in 1908 a sort of telescopic sight was adopted, its adoption proving how little the board of those days knew about telescopes and their desirable qualities. This was the "Telescopic Musket Sight, Model of 1908," made by the firm of Warner & Swasey. It embodied most of the undesirable qualities which could be built into a telescope rifle sight and for this reason was an inspiration on the part of somebody. It was prismatic, with the objections of any prismatic glass in sensitiveness to shock or blow. The power was entirely too high, the field entirely too small, the eye-relief entirely too short, the instrument entirely too heavy;

An M1903 Springfield with the M1913 Warner & Swasey "Musket Sight" mounted. It also mounts a Maxim Model 10 silencer. (NARA)



This World War I sniper uses an M1903 with what appears to be a M1913 Warner & Swasey "Musket Sight" mounted; note that he has removed the rubber eyepiece, which most users found uncomfortable. (NARA)



A 1916-manufacture M1903 with the M1913 Warner & Swasey "Musket Sight"; also shown is the case for carrying the M1913 sight when not mounted. (Rock Island Auction Service)

it was off-set from the rifle, taking the head away from the stock; it had a rubber eye-cap that would make a flincher out of a cigar-store Indian and it had a graticule etched on glass, which glass plate was set in the focus of the eye-lens and collected all of the dust, pieces of internal black paint, balsam, sticks, stones, honey-bees, butterflies or other objects which collect on this windshield. In turn these being magnified 6 times, presented the most pleasing and novel appearance you ever saw in a scope. A grain of dust looked like a half-brick, other objects d'art in proportion and the fascinated rifleman got to admiring the microscopic study of inanimate nature presented to him by this glass graticule instead of looking at the scene at points outside the objective, which he was supposed to do. (Crossman 1951: 345)

An improved version designated the "Telescopic Musket Sight, Model of 1913" was developed with a lower power – 5.2x – which increased light-gathering power somewhat. It remained difficult to get a good "cheek weld" against the stock to properly use the offset scope, however. As a result, tests were carried out on a pair of German scopes – the Zeiss and Goerz – in 1914. Although the latest board convened to evaluate a scope for the M1903 found the Goerz desirable, it would not be obtainable due to Germany's involvement in World War I.

As a result, Frankford Arsenal developed a scope that was similar to the Winchester A5 adopted by the US Marine Corps and that had some characteristics of the Goerz. This 2.6x scope used a sliding mount of the type used on target rifles, rather than a fixed type more suitable for sniping. Without full field testing it was adopted as the "Telescopic Musket



A US Marine firing the "USMC Telescopic Rifle, Model of 1917," which mounts a Winchester A5 scope. (NARA)

Sight, M1918.” Orders for thousands of M1918s were placed with Winchester. It was decided that the M1918 would actually work better if mounted on the M1917 Enfield, but before production of the scope really got started World War I ended, and the contract was canceled before any scopes were actually delivered. In 1920, the scopes were given a thorough testing to determine whether the M1918 should be considered for future production, but the scope proved quite fragile: after firing a few hundred rounds, lenses came loose and the large elevation knob cracked off the rear bracket. Although testing continued, the scopes were not adopted.

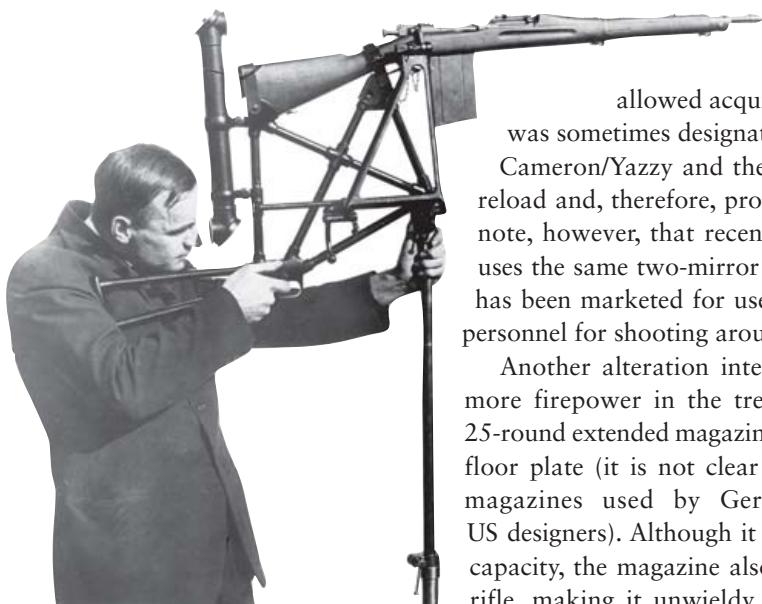
In 1909, the Department of Experiment at Springfield Armory evaluated the Maxim silencer³ for issue alongside the optical sight to “Expert” marksmen, initially viewing them as useful training devices for introducing recruits to the M1903. The Maxim Silent Firearms Company produced one of the first really effective sound silencers, which used a series of baffles to cause gases to “whirl around” inside the suppressor until their velocity was reduced enough that they could exit by centrifugal force. When tested by a US Ordnance board in 1910, it was found that the Maxim silencer actually reduced the rifle’s report by about two thirds.

The Maxim silencer was recommended for adoption in 1910, with two star-gauged rifles with M1908 scope and Maxim silencer to be issued to each infantry company or cavalry troop. Presumably, the thinking was that use of the silencer would make it more difficult to locate the soldier acting as a sniper. A further test of silencers was carried out in 1912, with those from Corumboef and Moore being evaluated. One hundred Moore silencers were acquired and fitted to rifles for a field evaluation in comparison to the Maxim silencers in use. As it transpired, neither the Moore nor the Maxim silencer was deemed effective enough to prevent location of the soldier firing, and those on issue were withdrawn. For at least a few years, though, some remained in use with National Guard units for training purposes.

One of the more interesting M1903 rifle developments during World War I was the design of rifles that allowed the infantryman to remain behind cover in his trench yet still engage the enemy. One altered M1903, designed by J. L. Cameron and L. E. Yazzi, consisted of a metal framework that could be clamped to the rifle’s stock, allowing operation of the rifle’s trigger and bolt remotely. A periscope-style prismatic sight was used for target acquisition. Usually known as the “Cameron/Yazzi Trench Rifle,” this device used a 25-round magazine extension to prevent the need for constant reloading. Another device, the Elder Periscope attachment, could be used in conjunction with the Cameron/Yazzi and allowed the use of the standard rifle sights. The author has not seen any reference to actual combat use of the rifles, though some of the 25-round magazines may have seen combat.

A more “practical” alteration was the “periscope attachment,” which employed what appeared to be a standard M1903 rifle; it allowed the stock to pivot and then lock in firing position at an angle to the upper

³ Although all US military references refer to it as a “silencer,” the term “suppressor” is also sometimes used; older works refer to such devices as “sound moderators”

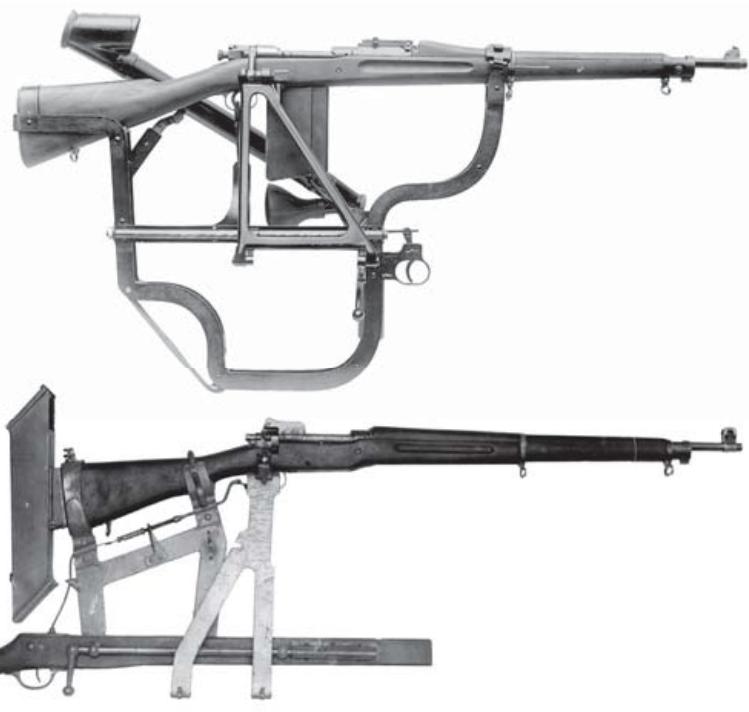


Various devices were developed to allow an infantryman to fire the M1903 over the parapet of a trench without exposing himself. This is the Elder Periscopic attachment; the rifle also has the 25-round extended magazine so that the user would have to reload less often. (NARA)

portion of the rifle. Two mirrors that functioned as a periscope allowed acquisition of the rifle's sights. This rifle was sometimes designated as the Guiberson rifle. Both the Cameron/Yazzy and the Guiberson were slow to fire and reload and, therefore, proved impractical. It is interesting to note, however, that recently a "Tactical Mirror Sight" that uses the same two-mirror principle to acquire red-dot sights has been marketed for use by military and law-enforcement personnel for shooting around corners or over barricades.

Another alteration intended to give the US infantryman more firepower in the trenches was the development of a 25-round extended magazine, which could replace the M1903's floor plate (it is not clear whether the innovative extended magazines used by German assault troops influenced US designers). Although it did quadruple the rifle's magazine capacity, the magazine also extended quite a way below the rifle, making it unwieldy in close quarters and difficult to assume the prone firing position. As a result, it was not widely used. The author has seen reference to these magazines having been developed for use in aerial warfare; however, this seems illogical since, by the time the US entered World War I, machine guns were in general use on pursuit aircraft. Nevertheless, in early 1918, Springfield Armory produced an "Air Service" rifle fitted with the 25-round magazine; it had a shorter stock with no rear sling-swivel, and the rear sight was modified so that the drift slide was locked at the 100yd position. In total, 910 M1903s were "stripped for Air Service" (Brophy 1996: 76). As a point of interest,

A Cameron/Yazzy Trench Rifle.
(NARA)



The Sitascope, still another attempt to develop a trench rifle.
(NARA)



The Guiberson rifle could perform as a standard M1903 when it was not broken open for trench use. (NARA)

The Guiberson rifle closed for use as a standard rifle. (NARA)

the first shot fired from a flying airplane was in 1910 with an M1903: 2nd Lt Jacob E. Fickel fired from a Curtiss Model D at a target from a height of 300ft, hitting it numerous times (Brophy 1996: 76). (Since the Army did not purchase its first Curtiss aircraft until 1911, it may be presumed that this shooting exhibition took place during one of the Curtiss demonstration flights for the Army. The first aircraft acquired in 1908 had been from the Wright Brothers, but the second aircraft purchased by the US Signal Corps was a Curtiss Model D in 1911.)

Probably the best-known alteration developed for the M1903 during World War I was the Pedersen Device, officially designated the “Automatic Pistol, Caliber .30, Model of 1918.” In simple terms, the Pedersen Device was a semi-automatic pistol mechanism that could replace the M1903’s bolt. Its short barrel extended into the barrel of the rifle. The Pedersen Device cartridge was very similar to the French 7.65mm Long cartridge later used in the M1935A pistol. Its cartridge, the “Cal. .30 Auto-Pistol Ball Cartridge, Model of 1918,” fired an 80-grain bullet at about 1,300fps from the rifle’s barrel. Cartridges were produced by Remington and packed in 40-round boxes. The round was weak enough that the device used a blowback action rather than a locked breech. The feed device was a 40-round magazine that fed from the top of the rifle.

Although rifles had to be altered slightly to use the Pedersen Device, with the device removed and the standard bolt replaced they could still fire standard .30-06 rounds. Altered rifles were designated “U.S. Rifle, Caliber .30, Model of 1903 Mark I.” The intent was that the M1903 Mk I rifle would be used in its normal bolt-action mode for fighting from the trenches, but that the Pedersen Device – which was carried in a scabbard along with a pouch or pouches carrying five spare magazines each – could be installed and used during advances or raids to give the individual soldier more firepower.

A World War I re-enactor demonstrates use of the Guiberson rifle using an example from the Springfield Armory Museum. (Springfield Armory National Historic Site)



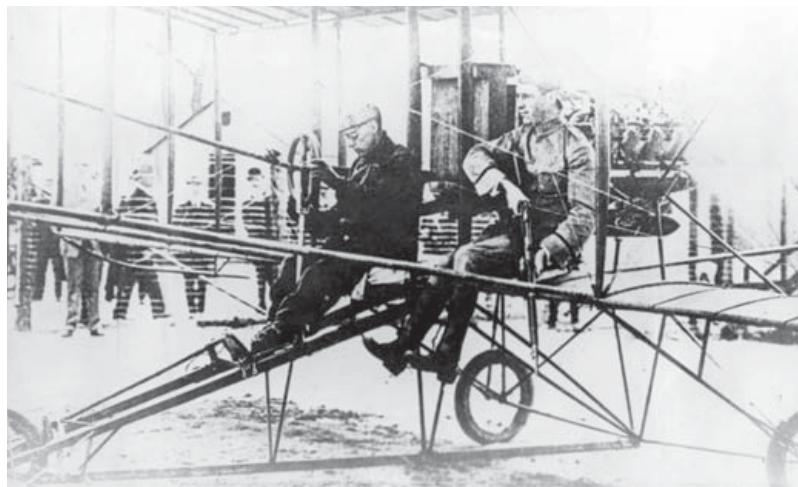
An M1903 fitted with the 25-round extended magazine. (NARA)



John Pedersen – who was also known for designing the Remington M51 pistol, a .45 version of which competed with the Colt M1911 during the US pistol trials, and the Pedersen rifle, which competed with the Garand during the US rifle trials – developed the Pedersen Device in secrecy starting in 1916. By spring 1917, a working prototype had been developed, which Pedersen took to Washington, DC, for a demonstration for John T. Thompson, the Chief of the Small Arms Division of the Ordnance Department at the time. After Pedersen fired his demonstration M1903 as a standard bolt-action rifle, he quickly replaced the bolt with his device and fired multiple magazines in quick semi-automatic fire. Because the device was still considered secret, only a few high-ranking officers witnessed the demonstration, but they were so impressed they immediately sent Pedersen to France to demonstrate the device to Gen Pershing. As a result, Pershing requested 100,000 Pedersen Devices and rifles altered to accept them as soon as possible.

As production got under way, an officer was sent to France to suggest to Pershing that 500,000 Pedersen Devices could be produced and ready for use in a large-scale spring offensive in 1919. Pershing agreed and made plans for arming assault troops with them, each carrying ten 40-round

Attempts were made to develop a version of the M1903 for firing from early aircraft. Some were fitted with the 25-round magazine. Shown is an M1903 carried by 2nd Lt J. E. Fickel in a Curtiss Model D piloted by Charles F. Willard in September 1910; Fickel is demonstrating how he fired the first shot from an aircraft. (USAF Museum)





magazines. However, the war ended before the devices could be delivered and, as a result, the order was cut back to 65,000. A total of 101,775 rifles were altered to Mk I configuration to take the devices. Pedersen Devices and altered rifles were put into storage as part of the "War Reserve" of weapons, but the Pedersen Device was declared surplus in 1931 and virtually all were destroyed. M1903 Mk I rifles were returned to M1903 standard, though there was an ejection slot that remained in the side of the rifle's receiver.

Most of the remaining Pedersen Devices went into museums or Ordnance reference collections, though a few were salvaged from destruction and have become among the most highly collected pieces of US military armament, with complete examples of rifle, device, magazines, and ammunition bringing between \$50,000 and \$100,000.

POSTWAR DEVELOPMENTS

Although the M1917 Enfield had proven quite serviceable during the war and its sights were generally considered superior to those of the M1903 as they offered better eye relief, the Enfield was declared "limited standard" after the end of World War I. The M1903 remained the standard US military rifle, though the board of officers that made the decision to retain the M1903 did stipulate that it needed a better rear sight. This was because of its long eye relief, which made the M1903 rear sight somewhat difficult to see; the battle sight, which employed a small notch rather than a more precise aperture sight, was also criticized.

By 1920, evaluation of possible replacements for the M1905 rear sight used on the M1903 had resulted in three being considered for possible adoption: the Nash sight, which had been designed in 1916 and employed a large elevation dial that took up substantial space on the left side of the receiver and required the magazine cutoff thumb piece to be relocated; the Lyman sight, which was a variant of the Lyman 48 used on Match rifles with the base machined to fit over the receiver bridge; and the Hatcher sight (designed by R. D. Hatcher, the brother of Maj Gen Julian Hatcher),

The Pedersen Device, the use of which could convert the M1903 to a semi-automatic firing a pistol-caliber cartridge. (Rock Island Auction Service, and the National Firearms Museum/NRAmuseum.com)

The Hoffer-Thompson gallery rifle and the M1922

In order for troops to be able to practice inexpensively and on indoor ranges that would not allow use of the full-powered .30 service round, the Ordnance Department deemed development of a "gallery" version of the M1903 very desirable.

An early attempt to provide a sub-caliber training version of the M1903 was what is generally known as the "Hoffer-Thompson," named for Capt Jay E. Hoffer, an Army Ordnance officer, who was involved in developing the rifle, and presumably John T. Thompson, who had supervised development of the M1903 and would later invent the Thompson submachine gun. Also known as the "Gallery Practice Rifle, Cal. .22, Model of 1903," this rifle was fitted with a .22 barrel and used dummy .30-06 cartridges, which had a firing pin inside to ignite .22 Short cartridges. The dummy cartridges were fitted into a stripper clip and loaded into the M1903's magazine as with a standard stripper clip. The standard bolt and firing pin were also used, as the firing pin inside the dummy round was designed to fire the rimfire cartridge.

In *The 1903 Springfield Rifles*, Brophy quotes from the "Rules for Management of the M1903 Gallery Rifle":

In use, one .22 caliber cartridge is loaded into each Holder by retracting the Plunger and inserting the cartridge, which is then pushed into its seat by the action of the Plunger Spring. Holders thus loaded may be packed into clips and loaded into the gun in the usual way, or they may be loaded one at a time without using the clip. The Holder being in the chamber of the gun and the bolt closed, the action is as follows: When the trigger is pulled, the Firing Pin is released and moves forward until the striker contacts with the rear of the Plunger Shank. The blow thus delivered drives the Plunger forward, causing the firing points of the Plunger to strike the rim of the .22 caliber cartridge and explode it. The Holder is ejected in the same way as a caliber .30 cartridge, and the caliber .22 cartridge case may be removed from the Holder by pushing the cartridge case and Plunger to the rear by means of the Ramrod, then grasping the plunger, withdrawing the Ramrod, and allowing the cartridge case to fall out through the slot in the side of the Holder. (Brophy 1996: 269–70)

Along with each Hoffer-Thompson gallery rifle, 25 cartridge-holders were issued as well as the ramrod for removing .22 cartridge cases, and .22-caliber cleaning rod and bore brushes. The Hoffer-Thompson gallery rifles were made from 1907 through 1919, with a total of 15,525 being produced by Springfield Armory. However, in use it was discovered that accuracy deteriorated due to deformation of the dummy cartridges hitting the floors of armories or other indoor ranges when ejected after firing. It was also found that the dummy

cartridges and bores became eroded due to the corrosive primers in the .22 rimfire cartridges.

In his *Suggestions to Military Riflemen*, Townsend Whelen offers some comments on the use of the Hoffer-Thompson:

The cartridges are loaded into "holders" which are steel chambers similar in shape to the regular cartridge. These holders are loaded into the rifle in exactly the same manner as the regular cartridge, and the rifle can be used as well for rapid fire as for slow fire. The rifle is extremely accurate at 50 feet, the range for which it is intended. The ammunition is very cheap and has a penetration at this range of about 4 inches in dry pine. The arm is a most excellent one for the purpose for which it was designed – namely, for gallery practice in the instruction of recruits. It has the same sights, action, balance, and feel as the regular service rifle and is loaded in the same manner, making one perfectly familiar with the rifle he will use in the regular season's practice and in the field. (Whelen 1909: 74–75)

Shortly after World War I, both for competition shooters and for training troops, especially those in the National Guard, a gallery load for the M1903 was developed. In 1919, this was adopted to replace the Hoffer-Thompson. Designated the "Cartridge, Gallery Practice, Cal. .30, M1919," this cartridge employed a lead bullet of about 120 grains at 1,100fps. However, the ubiquitous Julian Hatcher had begun working with the National Rifle Association (NRA) to develop a .22 small-bore rifle for civilian rifle clubs and schools that was similar to the service rifle and accurate enough for competition.

The new rifle was designed at Springfield Armory and was based closely on the M1903 action. Although the .22 rifle was designed to resemble the M1903 and operate in much the same way, many changes had to be made to accommodate the .22 rimfire cartridge. After receiving comment from various shooting clubs and others to whom prototype rifles were shown, and after incorporating the necessary changes, the .22 rifle was standardized as the "U.S. Rifle, Cal. .22, M1922." It used a five-round detachable magazine rather than the clip-fed internal magazine of the M1903, was fitted with a Lyman 48B rear sight, and used a sporting-type stock favored by the Office of the Director of Civilian Marksmanship (DCM), which coordinated sales of rifles to civilian shooters and other matters related to marksmanship training. In June 1922, the first rifles were made available for sale to civilian shooters through the National Rifle Association at \$39.12 each. Between 1922 and 1924, a total of 2,020 M1922 rifles were produced. An improved version, the M1922M1, was adopted by the Army for training in 1925 and was not sold to civilians until all rifles needed by the Army had been produced. In 1932, based upon experience with the M1922M1, an



A .22 Hoffer-Thompson gallery rifle. (Rock Island Auction Service)

improved version, the M1922M2, which incorporated improvements to the bolt and enhanced feed reliability, was introduced.

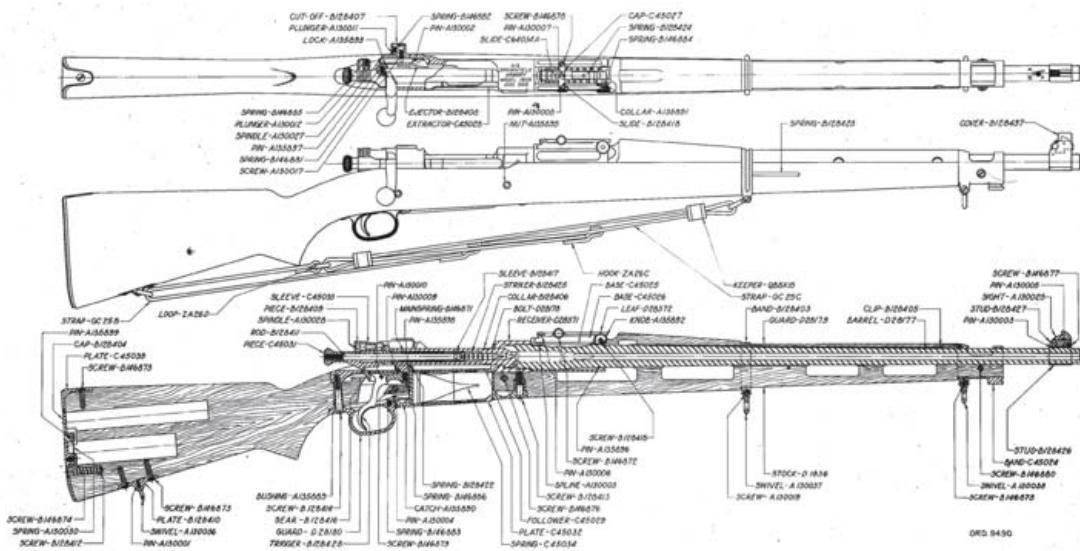
Some of the features incorporated into the M1922M1 had been developed for the .22 Match rifle built for competitors in the 1924 International Small Bore Free Rifle Matches. The "International Match Rifle, Cal. .22, Model of 1924" was built to duplicate the weight and feel of the .30 International Match Rifle. The bolt and mechanism of the M1922 were completely redesigned for the

M1924. The detachable magazine was eliminated as well so that the cork palm rest could be attached to the receiver. Some features incorporated into the M1924 .22 International Match Rifle were also used in the M1922M1, including an improved firing mechanism. Since the M1922M1 would be used as a training rifle, its stock was designed to more closely approximate the service stock. Once the Army had sufficient M1922M1 rifles, civilian sales began in 1926 for a price of \$46 plus \$1.34 for packing.

which used a short leaf with a drift slide that was threaded for an elevation screw. Twenty-five examples of each type of rear sight were produced and mounted on rifles. They were then sent to the US Army's Infantry Board for testing. However, the Infantry Board had not made a recommendation for adoption of any of the sights by 1923, at which point interest in a self-loading rifle was such that no change was made to the M1903 rear sight. It should be noted, though, that in 1919–20 the Marine Corps adopted a new undercut front-sight blade manufactured by Lyman and a new drift slide (the aperture sight that fitted on the rear "ladder" portion of the sight) with a single 0.10in aperture produced by Springfield Armory.

Production of the M1903 ceased at Rock Island Arsenal on June 30, 1919, though it appears that spare parts were manufactured for some time past that date. M1903 rifles were still being produced at Springfield

A diagram of the M1903A1, which went into production in 1928 and incorporated the pistol grip. (NARA)



M1903 (above) and 1903A1 (below) Springfields; note that the stock on the M1903A1 incorporates a pistol grip and eliminates the finger grooves in the forearm. Prior to 1917, M1903 rifles were blued, but after that year they received the flat, durable Parkerizing finish that would be used for US military weapons for decades. Parkerizing was cheaper and offered better scratch and corrosion resistance. From 1943 onwards, a lighter, gray-green Parkerizing finish was used instead. (NARA)



Armory, but production was down from 1,500 per day at the war's end to 300 by 1919. However, as of 1927, assembly of complete M1903 rifles ceased at Springfield Armory as well, though manufacture of parts again continued. From 1928 through 1940, stocks of the M1903 were considered sufficient that the only assembled M1903 rifles produced at Springfield Armory were those for National Match sales.

M1903 barrels were all produced from a type of carbon steel known as "Ordnance Barrel Steel." During World War I, contractors had supplied barrel blanks and finished barrels to Springfield Armory and Rock Island Arsenal. While most of these were of good quality, there were some that were weak, especially those from Avis Rifle Barrel Company of New Haven, Connecticut. After the war, when the problem was discovered, the proof load was increased from 70,000psi to 75,000psi, which eliminated any remaining barrels that were likely to fail.

Accidents with M1903 rifles that had the early case-hardened actions continued to occur, however. There was particular concern that soldiers would use rifles with these weaker actions to fire rifle grenades, which generated higher pressures. As a result, on December 2, 1927, a board of officers was convened to recommend a policy related to Springfield Armory M1903s with serial numbers below 800,000 and Rock Island Arsenal receivers below 285,507. Among their determinations was that heat-treating the receivers again was not practical and that, hence, they should be withdrawn from service. It was recommended that the rifles with the early form of heat treatment no longer be issued and instead be set aside as a "war reserve." Rifles with the lower serial numbers that came into armorers for repair were to have the parts stripped for spares and the receivers destroyed.

A pistol-grip stock, usually known as the Type C stock, became the new standard service stock in December 1929, with rifles fitted with this stock designated "U.S. Rifle, Cal. .30, M1903A1." (Note that the designation "M1903A2" may be encountered as well. The M1903A2 was a stripped M1903A1 or M1903A3 used as a sub-caliber rifle; these are mounted in the breech of an artillery piece to allow inexpensive training and sighting.)

By 1935, the M1 Garand would offer the US Army the most advanced infantry rifle of its time, a self-loader that could rapidly be reloaded using self-contained clips. As Springfield Armory began tooling up to produce the M1 Garand, even production of M1903 parts was discontinued until 1937, when, the Garand tooling completed, limited production of M1903 parts began once more.

PROTOTYPES AND NEW PRODUCTION: TOWARD WORLD WAR II

The .303 program

In 1940, as things looked dire for Great Britain after Dunkirk, the country attempted to augment its capacity for production of No. 4 Mk I* rifles by contracting for them to be produced in the USA. The first contract was with Stevens Arms Company of Massachusetts, but preparing tooling for the British service rifle would take time. Stevens suggested the possibility of producing a version of the M1903 rifle instead, using machinery from Rock Island Arsenal that had not been used for some years. However, it was actually Remington that contacted Rock Island Arsenal and, on March 4, 1941, leased the machinery needed to produce M1903s for the British. Remington also arranged to trade cartridges loaded by their ammunition division to the US Ordnance Department for a large number of wooden handguards and stocks in store at Rock Island Arsenal, to be used for production of the new M1903s.

In preparation for production, Remington engineers worked on altering the M1903 bolt, magazine, and other parts to allow chambering of the British .303 service cartridge. Sights and stock would also be altered to approximate those of the No. 4 Mk I*. The .303 version of the M1903 never went into production, however; as with the beginning of the Lend-Lease Program in March 1941, procurement of weapons was no longer carried out by British representatives in the USA but through the Ordnance Department.

The “Bushmaster”

A specialized version of the M1903 was developed for use in jungle operations by the Jungle Security Platoon of the 158th Infantry Regiment of the Arizona National Guard in Panama early in 1941. Usually known as the “Bushmaster,” these rifles had 6in removed from the barrel and the front sight remounted at the US Ordnance Shop in the Panama Canal Zone. They were designed to be much handier in jungle combat than the standard M1903 rifles, much as the British rifle No. 5 Mk I “Jungle Carbine” was designed to be a handier version of the Lee-Enfield. Reportedly, all of the Bushmasters were reconfigured to standard M1903 specs before the unit deployed to the Pacific in January 1943. In actuality, Springfield Armory had built an experimental carbine version of the M1903 in May 1921. Two were constructed, with 20in star-gauged barrels and a Lyman 48 rear sight (Brophy 1991: 201), but the project never got beyond the experimental stage.

The M1903 (modified) and the M1903A3

In September 1941, with Remington ready to begin production, the US War Department gave the company a contract for 134,000 M1903s, with the number soon raised to 174,000. These rifles as produced were virtually the same as M1903s previously manufactured at Rock Island Arsenal. However, a combination of worn Rock Island Arsenal tooling and less experienced Remington production personnel – and, once the US entered



1 A Remington-produced M1903A3, the simplified version of the M1903 that was manufactured in substantial numbers between 1942 and 1944.

2 A close-up of the M1903A3's rear sight, which many considered superior to that of the standard M1903. Since it was situated further back it offered better eye relief; it also incorporated an aperture for easier and more precise aiming. (Author)

3 A close-up of the "1903A3" markings and also of the rifle's follower. (Author)

4 Barrel markings on a Remington-produced M1903A3 made in April 1943. Note the shrouded front sight; the shroud protected the front sight from getting damaged and also shaded it from the sun. (Author)

the war, the need to speed up the process and cut costs – resulted in some changes in the design. The changes included the replacement of some machined components with subcontracted stamped ones, doing away with the walnut stock with finger grooves in favor of a less expensive stock, and use of a simpler aperture rear sight mounted on the rear of the receiver instead of on the barrel. (A common complaint for many years among soldiers using the M1903 had been that the rear sight was mounted too far forward; this made it harder to get a good cheek weld and still get a good sight picture due to the long eye relief.) As Bruce N. Canfield notes: “By early 1942 the company had made some 649 changes in '03 manufacture to speed production and reduce costs” (Canfield 2010a: 56). With Springfield Armory and Winchester attempting to increase production of M1 Garands to meet wartime needs, the number of M1903s contracted to Remington was increased as well, reaching a total requirement for 508,000 “U.S. Rifle, Cal. .30, M1903 (modified)” by March 10, 1942. To acquire even more M1903 (modified) rifles,



A close-up of a Type 3 front sight, as used on Remington's M1903 and M1903 (modified) rifles. (Author)



Markings on a Remington-produced M1903 (model of 1942) made during World War II; this also gives a good view of the M1905 rear sight as produced in the early part of World War II. (Author)

a contract was given to the Smith Corona Typewriter company for 100,000 rifles on February 25, 1942, and later increased to 380,000. This represented a return to the company's roots, as the Smith brothers who had founded the company had originally produced firearms.

As of May 21, 1942, the M1903 (modified) was approved for full production at both Remington and Smith Corona as the "U.S. Rifle, Cal. .30, Model 1903A3." Barrels for Smith Corona M1903A3s were produced primarily by High Standard Manufacturing Corporation, a long-time New Haven, Connecticut, gunmaker. While Remington-produced M1903A3 barrels had two-groove and four-groove rifling, those from High Standard used on Smith Corona rifles had four-groove rifling, with a small number (5,000) of barrels having six-groove rifling.⁴

Prior to the February 1944 cancellation of Remington's and Smith Corona's contracts to build M1903s, the two manufacturers built a total of 1,385,629 M1903, M1903 (modified), and M1903A3 rifles, broken down into 364,954 M1903 and M1903 (modified) and 783,844 M1903A3 by Remington, and 236,831 M1903A3 by Smith Corona. After production of rifles ceased, Remington still had a contract to build enough spare parts to last for any foreseeable future use of the M1903-type rifles. Springfield Armory had also produced M1903 parts during the war along with building M1 Garands, but reworked fewer than 1,000 selected M1903A3s as M1903A3 National Match rifles during the early to mid-1950s.

The M1903A4

During wartime, there was a need for accurate rifles to supply US snipers, who entered World War II without a sniping rifle. As a result, on January 18, 1943, the US War Department directed Remington to pull 20,000 M1903A3 rifles from the production line and convert them to sniping rifles based on specifications supplied. The order called for the delivery of 500 rifles in January 1943, 1,000 in February, and 2,000 per month after that until a sufficient number had been delivered. An additional 8,365 M1903A4 sniping rifles were ordered on June 20, 1943.

The rifle was designated the "M1903A4 (Sniper's) Rifle" and was identical to the standard M1903A3 except that it had a 2.2x telescopic sight instead of iron sights. Furnished by the Ordnance Department for the M1903A4 was the "M73B1 Telescopic Sight," which was a military version of the Weaver 330C scope with a crosshair reticle. This scope was selected primarily because it was inexpensive and readily available, rather than because of its usefulness for sniping. In fact, it had distinct disadvantages for military usage, including low magnification, fragility, and lack of moisture-proofing. When the scope was mounted, it was difficult if not impossible to load the magazine using a stripper clip, so rounds had to be loaded into the magazine individually. A major criticism from troops who used the M1903A4 with the M73B1 was that, despite the fact the scope was known to be fragile, the rifle was not equipped with BUIS (Back-Up Iron Sights). As a result,

⁴ Although some believe that the use of more grooves improves accuracy, there is little evidence to support this. Normally, it is easier to machine a barrel with fewer grooves and the cutting tool thus lasts longer

National Match M1903s

At least some benefits of the use of the M1903 for sniping accrued from its extensive use as a Match rifle. Marine Morris Fisher, World (1923 and 1924) and Olympic (1920 and 1924) rifle champion, had extensive experience in shooting the M1903 in Matches. He discusses the rifle's trigger pull in his book, *Mastering the Rifle*:

The slack in the trigger of the Springfield rifle is intended as a safety measure, to prevent it from being prematurely discharged. Commercial guns do not as a rule have slack in their triggers, nor has it been proven to be of any value, since the gun is in danger of being fired whenever the finger touches the trigger. (Fisher 1940: 51)

Fisher also comments on using the M1903's sights in competition:

A Springfield rifle will seldom hit the center of the bulls-eye with the sight set on its mechanical reading. The sight may have to be set 25 or 50 yards above or below the elevation for which the range calls. This is not due to the inaccuracy of the rifle, but in all probability to the mechanical differences in sights. (Fisher 1940: 53)

Those M1903 rifles that were used in National and International Matches are of special interest as they were designed to maximize the accuracy of what was a very accurate rifle as issued. Until 1920, M1903 Springfields used in the US National Rifle Matches were standard service rifles that had been carefully selected and adjusted for accuracy. Beginning in 1921, however, rifles for the National Matches were manufactured specifically for competition. Special National Match Springfield rifles would be produced until 1940, at which point Matches were suspended due to preparations for possible US entry into World War II.

Among the special features of an M1903 National Match rifle were barrels machined from special Springfield Armory Class A steel and precision rifled; carefully machined and polished chamber; carefully machined receiver; bolt channel polished; receiver and barrel carefully assembled to ensure alignment of the receiver to the bore; bolt fabricated of specially double-heat-



ABOVE The Lyman 48 sight illustrated in a catalog from the 1950s. It remained very much the same through the years. (Author)

treated steel and carefully polished; head space held to the minimum; carefully selected and gauged mainspring; stocks cut to allow precise "bedding" of the barrel and action; upper and lower barrel bands loose enough not to affect barrel harmonics; sights fitted for precise adjustment; trigger pull between 3.5lb and 4.5lb; and a buttplate checkered to seat firmly against the shoulder. Additionally, many small parts were selected and polished. Once assembled, each rifle was carefully inspected then test fired for accuracy.

At the end of competition at the National Matches, competitors who had been issued a National Match M1903 for the competition had the option of purchasing it. Those M1903 National Match rifles purchased by the competitors and kept with the original paperwork are highly coveted by collectors. Those rifles not purchased were reconditioned with some parts being replaced with standard service parts. Some were later sold



An M1903 National Match rifle; note the Lyman 48 peep sight. (Rock Island Auction Service)

or used in Matches other than the National Matches. In some cases, if their accuracy diminished enough that they were no longer used in Matches, rifles were returned to armories and used as standard service rifles.

In 1928, a pistol-grip stock was added to the National Match M1903. A similar pistol-grip stock, usually known as the Type C stock, became the new standard service stock in December 1929.

The M1903 International Match rifle evolved as US shooters entered post-World War I international competitions. The M1903 rifle that was used by US shooters who had won the 1920 Olympic military rifle competitions was basically the same as those used in the US National Matches. For the 1921 International Matches at Lyons, France, which was won by the US team, their rifles used an M1903 action of National Match quality, combined with a 24in heavy tapered barrel. Sights were the Lyman 48B, a precision adjustable-aperture sight. The stock was based on the M1922 .22 rifle stock.

For the 1922 International Matches, the M1903 rifles built were customized to the individual shooter. Many of the special features related to the stocks, which incorporated an adjustable upper sling-swivel, a checkered pistol grip, a buttstock individually fitted to the individual shooter, a ball-shaped cork palm rest, and a barrel between 24in and 30in long depending on the shooter's preference. Other features included set triggers manufactured at the Marine Small Arms Arsenal and Armory at

the Philadelphia Navy Yard, Pennsylvania. A more precise version of the Lyman 48 sight, the Lyman 48C was used. An improved International Match rifle was produced for the 1924 Matches that incorporated double-set triggers. Basically the same International Match version of the M1903 would continue to be used throughout the 1920s.

Because competitors in national and international competitions were constantly seeking an edge, small improvements were made in the rifles yearly. However, it is beyond the scope of this book to devote too much space to limited-production Match rifles, rather than to those that saw front-line service. A final point should be made, however, about the M1903 as a Match rifle. Many serious competitors have pointed out that one of the great advantages of the M1903 was that it was chambered for the .30-06 cartridge, which was an especially accurate round. In some cases, particularly accurate Match ammunition was produced for use. Between 1935 and 1940, the Western Cartridge company of Illinois brought carefully hand-loaded Match ammunition to Camp Perry, Ohio, for the National Matches, ammunition that performed particularly well (Crossman 1951: 32). The accuracy of National Match ammunition available in 1929 was such that it would shoot 8in groups at 600yd (Crossman 1951: 127). At this distance, a 10in group with a standard M1903 and standard ball would be quite good.

BELow The 1929 US Army Rifle Team with their M1903 Match rifles. (Springfield Armory National Historic Site)



if the scope became fogged or broke, the rifle was virtually useless. The Redfield mount used with the M73B1 allowed the scope to be readily removed to prevent damage when the rifle was being transported.

Initially, stocks were furnished by Springfield Armory with a full pistol grip. Receivers were mated to selected barrels and bedded into the stocks from Springfield. Although many M1903A4s had a stock with a full pistol grip like the type used on the M1903A3, some M1903A4 rifles had what were known as “scant grip” stocks that had only a vestigial pistol grip. The bolt handle had to be altered by being forged concavely and had a clearance cut made so that it would clear the scope’s eyepiece. A clearance cut in the stock was also required.

The goal of delivering the first rifles in January 1943 was not met, as the first M1903A4s were not delivered until February. Production continued up to June 1944, at which point procurement of M1C Garand sniping rifles took priority. A total of 29,964 M1903A4 sniper rifles were built by Remington (Brophy 1996: 190).

A USMC sniper in Korea takes aim through an M1903 sniper's rifle mounting an 8x Unertl telescopic sight. Because of the terrain in Korea, snipers often proved invaluable for engaging the enemy across valleys. (NARA)

US Marine Corps sniper rifles

Based on their long-standing traditions of marksmanship and sniping, the US Marines have often developed their own sniping rifles. This was the case with the “Model of 1941 Sniper Rifle.” Most experts believe that the M1941 sniper rifles were assembled at the USMC armory at the



Philadelphia Navy Yard, Pennsylvania. These rifles used Springfield Armory receivers, star-gauged M1903 barrels, full-pistol-gripped stocks, handguards with the swell milled flat for scope mounting, and Unertl 8× scopes marked “U.S.M.C.-Sniper.” The mount used with the Unertl scope was quite distinctive as it allowed the scope to move forward while the stock moved rearward during recoil. Many of these rifles were used by Marine competitive shooters prior to the war and were initially assembled as M1903A1 National Match rifles.

In his book *Telescopic Rifle Sights*, Col Townsend Whelen, an advocate of higher-powered scopes for snipers, describes the criteria used by the USMC Board that selected the Unertl scope:

In 1941 a board of officers was appointed in the United States Marine Corps to select equipment for snipers. They made a very exhaustive study of the subject, and conducted many tests of various scopes under practical field conditions. They came to the conclusion that a scope of about 8 power, with an object lens of about 1½ inches, with medium fine cross-wire reticle, and with double micrometer quarter minute click mounts was decidedly the best under all conditions except rapid fire, which type of fire is not important to the sniper. Such a scope even showed its superiority under the difficult lights of early dawn and evening.

The board objected to one feature of all such existing scopes – the short eye relief of only about 2½ inches, which was unsatisfactory on a rifle of as heavy recoil as the .30-06, as well as when aiming in positions other than prone, and particularly when aiming down hill. So they had Mr. John Unertl make them up a special scope which had an eye relief of 4 inches, even though they had to sacrifice field of view in order to obtain such eye relief. This scope was of 7 power, with an objective of about 1½ inches. It was a typical target scope in all respects except eye relief. (Whelen 2005: 164–65)

Note that although Col Whelen mentions a 7× Unertl, as contracted for by the USMC and used on Marine sniper rifles, the Unertl scope was actually 8×.



USE

To the Philippines and France

In the period after the Spanish–American War, the US Army began to shift its focus from constabulary duties to the possibility of modern warfare against foreign powers. Nevertheless, most US regular troops to see combat early in the century were involved in counter-guerrilla “constabulary” duties in the Philippines. Early in the 20th century a staff college was created, as was a general staff, in order to prepare the Army. Annual maneuvers were carried out so that troops could take part in simulated combat. The first US peacetime Army divisions of around 10,000 were formed shortly after the turn of the century as well.



Most historians believe the first use of the M1903 in combat was against the Moros in the Philippines. This 1913 painting entitled *Knocking out the Moros* shows the M1903 in use. (US Army Center of Military History)

An important part of the modernization of the US Army was the adoption of the M1903 Springfield, which fitted the US view that each soldier should be a marksman armed with an accurate rifle. As a result, US training doctrine envisioned each US infantryman as capable of delivering rapid, aimed fire to stop an enemy attack. Although the US had M1895 Colt-Browning machine guns and still retained Gatling guns, prior to entry into World War I the rifle was viewed as the decisive weapon on the battlefield and, at close quarters, the bayonet was still considered the best tool for breaking the enemy with an infantry charge.

Although the US Army had grown from the 30,000 regulars preceding the Spanish–American War, it would not reach a strength of 100,000 until just before entry into World War I. As a residual of the Indian-fighting days in the West, the US Army still put great stress on horsed cavalry and the views of the cavalrymen carried substantial weight in the adoption of new weapons and equipment.

INTO SERVICE

An early incident in which the M1903 was allegedly “fired in anger” occurred at Brownsville, TX, during August 1906. Black soldiers of the 25th Infantry stationed nearby at Fort Brown, TX, had experienced a great deal of racial prejudice from residents of Brownsville, resulting in very bitter feelings. On the night of August 13, 1906, a white bartender was killed and a white policeman wounded by an unknown assailant or assailants. Town residents and law officers blamed the black troops, even though their white officer attested that they had not left their barracks. Evidence in the form of fired .30-03 cases was presented, though the cases were likely planted. Nevertheless, 167 black soldiers were dishonorably discharged in an incident that highlighted the racial injustice of the time.

By 1907, virtually all – if not all – of the US Regular Army had been equipped with the M1903.

The Philippines

The first use of the M1903 in combat by the US Army is not recorded, though it was quite possibly in the Philippines against insurgents, soon after US Army units stationed there had their Krag-Jørgensen rifles replaced by M1903s. A note in the Springfield Armory annual report for 1906–07 mentions problems encountered in the Philippines, with the bayonet catch on the M1905 blade bayonet used with the M1903 rifle and 27,500 new bayonet catches being sent to the Manila Ordnance Depot to correct the problem (Brophy 1991: 143).⁵ This implies that, by the end of 1907, the US Army and Philippine Scouts – indigenous troops under US officers, formed into companies that fought alongside Regular Army units – were armed with the M1903.

⁵ In 1907, total US Army strength was 62,398, with 16,000 men in the Philippines

If not earlier, the M1903 was almost certainly used during the battle of Bud Bagsak against the Moros in June 1913. In this four-day battle, US troops, led personally by John “Black Jack” Pershing, occupied front-line positions so close to the enemy that troops were endangered by hurled spears from the Moros, as well as from Moro sniper fire, though accurate fire from the M1903s in the hands of the US Regulars and Philippine Scouts suppressed the sniper fire to some extent. Eventually, the Moro rebels were defeated in bitter hand-to-hand fighting. In fact, a 1913 painting titled *Knocking out the Moros* depicts a battle from the same year, possibly Bagsak, and definitely shows troops using M1903s.

USMC use before World War I

Anecdotally, many of the early uses of the M1903 in combat were by the US Marines, who often went ashore to protect US interests. First issue of the M1903 to the Marines was in 1908, to replace the 6mm M1895 Lee-Navy used previously. As a result, the Marines likely used their M1903s in Nicaragua in 1912, then during the landings at Vera Cruz, Mexico, in April 1914 and during the subsequent occupation up to November 1914. Prior to World War I, the Marines also used their M1903s in Haiti and the Dominican Republic, and were impressed with their accuracy.

The Marines had always stressed marksmanship, perhaps dating from the days when they sniped at the enemy from the masts of sailing ships. Alfred V. Houde Jr, a former Curator of Ordnance at the Marine Corps Museum, discusses the training Marines received with their M1903s after issuance began in 1908:

As outlined in the 1913 edition of the *U.S. Marine Corps Score Book and Rifleman's Instructor for the New Springfield Rifle*, each Marine was required to know the nomenclature and function of every part of the rifle. Moreover, each Marine was trained in the proper care and maintenance of the rifle. Marine recruits learned that proper rifle care resulted in better shooting qualities. The manual also introduced the



US servicemen armed with Springfields during the invasion of Vera Cruz, Mexico, in 1914. The machine gun is the Colt M1895.
(NARA)

phrase “clean before you eat, noon and night.” Before recruits qualified on the range, instructors insured that each man understood how to set the sights, hold the rifle in all the basic positions, and aim. As an incentive, marksmen received \$2.00, sharpshooters \$3.00, and expert riflemen \$5.00 per month extra pay. (Houde 2004: 11)

Pre-1917, the M1903 also saw action with US Army troops under Gen “Black Jack” Pershing fighting against the forces of Pancho Villa during the Punitive Expedition into Mexico during 1916–17. Some of these M1903 rifles equipped with M1908 Warner & Swasey “Musket Sights” and Maxim silencers were used by troops during the Punitive Expedition (Canfield 2010b: 215).

Most troops preferred the ’03 to the Krag. Trained troops could maintain a rate of fire of 15 rounds per minute due to the ability to load from stripper clips. This was faster than with the Krag, which required rounds to be loaded individually. From the beginning the ’03 was renowned for its accuracy, which was at least equal to that of the Mexican Mausers faced on the Punitive Expedition and better than the German Mausers faced in the trenches of World War I. The .30-06 round had a practical range of over 600yd and a maximum effective range of 1,200yd. The 7×57mm Mauser spitzer round used in the Mexican Mausers had a good reputation for accuracy as well. In fact, the 7×57mm Mauser round was the basis for the .275 Rigby sporting round, which was used for long-range shooting on plains game. Of course, it is important to remember that the effectiveness of the 7×57mm Spanish Mausers faced during the Spanish–American War had been a major influence in the adoption of the M1903 Springfield. In Mexico, US troops were facing the same basic rifle once again, but this time the Americans were armed with the more effective Springfield.

Carrizal, June 21, 1916 (overleaf)

African-American troops of the US 10th Cavalry saw action against Mexican Federal troops. While chasing Pancho Villa, Gen Pershing received intelligence that he was at Carrizal in the Mexican state of Chihuahua. Under captains Boyd and Moray, troops C and K of the 10th Cavalry were sent to investigate. Instead, the cavalrymen encountered Mexican Federal troops under Gen Felix Gomez. The Americans attacked the Mexican forces, killing 45 including Gen Gomez. The 10th suffered the loss of both officers and 14 troopers killed, with 23 taken prisoner. For a time, it looked as if the incident could lead to war between the USA and Mexico.

As the 10th Cavalrymen advanced, they were taken under fire by Mexican Hotchkiss M1914 machine guns. Members of the 10th Cavalry engaged the machine-gun crews with accurate fire from their M1903 Springfield rifles. Mexican troops also fired at them with their Mexican 7mm M1910 Mauser rifles. The cavalrymen are also armed with the M1911 Colt pistol in an M1912 swivel holster, as US cavalrymen normally carried a pistol as well as a rifle. They were also armed with the M1906 saber, normally carried on their saddle.

The uniform depicted is the khaki hot-weather uniform with 1906-pattern campaign hat. The troops wear Blucher boots with canvas leggings, and their bandoliers are the M1912 Cavalry pattern.





WORLD WAR I

Although there were sufficient M1903 rifles to arm the pre-World War I US Regular Army, as discussed previously, production capacity could not match the needs of the AEF once the USA entered World War I. Indeed, the M1903 would see a great deal of combat, but there were simply not enough to arm every US infantryman, let alone other troops. Exacerbating the problem was the fact that a US infantry division had 12,250 riflemen – far more than those in other armies of the era (Ayres 1919: 104). James Rainey describes the problems of rapidly training and equipping a large fighting force:

So far at least as equipment goes, there is conclusive evidence that America was unprepared for entry into World War I. Army inventories in April 1917 counted 587,000 Model 1903 Springfield rifles and 200,000 obsolete Krag-Jørgensens. Some American plants had been manufacturing Enfield rifles for the British, and when those contracts were satisfied the production lines were modified to produce a hybrid Enfield, the Pattern 17, capable of firing the American .30-06 cartridge. Production of Springfields was increased, but plants could manufacture only 1000 of these weapons per day at peak effort. With the bulk of the Springfields and Pattern 17s going to France to arm the AEF, divisions at home were left to train with the Krag-Jørgensens, Canadian Ross rifles, and some Russian Mosin-Nagant models. (Rainey 1992: 92)

These and other equipment and ammunition shortages hampered effective individual and unit training well into 1918. Recruits assigned to the 82nd Division as late as October 1917 “were given 4-inch boards and told to cut out a rifle for learning the manual of arms” (Rainey 1992: 92).

The M1917 Enfield

One of the great misconceptions about the M1903 Springfield concerns its use during World War I. Although it was the US service rifle when the USA entered the war, it was not the rifle that armed the majority of US infantrymen during it. Upon the United States' entry into World War I, about 600,000 M1903s had been produced, with about 160,000 Krag-Jørgensen rifles still on hand, held as a reserve. More than 280,000 Russian 7.62×54mmR M1891 Mosin-Nagant rifles were also purchased when the new Russian government defaulted on contracts with US manufacturers after the revolution. These Russian rifles were primarily used for training.

During World War I, Springfield Armory produced 265,627 M1903s and Rock Island Arsenal 47,251, for a total of 312,878. When combined with those M1903s already on hand, the USA had somewhere around 910,000 Springfield M1903 rifles, nowhere near enough to arm the AEF. The majority of US infantrymen were instead armed with the M1917 Enfield. The

.303 Pattern 1914 Enfield had been produced for the British until the USA entered the war. At that point, to address the desperate need for rifles, the Pattern 1914 design was adapted to fire the .30-06 cartridge and designated the “United States Rifle, Cal. .30, Model of 1917.” Prior to the end of World War I, 2,193,429 M1917s were produced at three plants: Eddystone (a subsidiary of Remington), Remington, and Winchester. Production of the M1917 continued for a few months after the Armistice, ceasing at Eddystone and Remington in December 1918 and at Winchester in March 1919. An additional 319,694 M1917s were produced during this period, making a total of 2,513,123. Contracts for a further 2,321,566 M1917s were canceled.

In addition to the M1903 Springfield and the M1917 Enfield, US troops were also equipped with supplemental service rifles including the M1896 or M1898 Krag, the Ross rifle, the M1891 Mosin-Nagant rifle, the French Lebel and Berthier rifles, and the British SMLE rifle.

Things were not much better for the first US soldiers arriving in France. Chronicler of the United States involvement in World War I Byron Farwell describes the state of a typical soldier arriving in France without a rifle:

Leo J. Baile, a private in Company M, 9th Infantry debarked in early September, 1917. He, like the rest of his company, had never fired a Springfield rifle. Few had ever fired a firearm of any description. As he had no scabbard, Baile's bayonet was wrapped in a newspaper. He had been issued ten rounds of ammunition and was eager to fight the Germans, but as he later wrote, "To have been sent to the front at that time would have been murder, but we were all willing to go. We were woefully ignorant of the basic principles of a soldier." (Farwell 1999: 94)

Those US troops who did have Springfields were quite happy with their performance. Military historian Edward Coffman mentions the feelings of troops towards the M1903:

Soldiers were proud of their service rifle. The Model 1903 Springfield was a very accurate shoulder arm. Indeed, as late as the Korean War, rifle companies would still have a few "03s" on hand for use as sniper weapons. Yet, despite the superiority of this rifle, the 600,000 on hand in 1917 were an insufficient number to equip the infantry of the rapidly burgeoning army. (Coffman 1986: 37–38)

Coffman also offers an example of the use of the Springfield by an experienced regular in no-man's-land:

On one patrol, Sergeant Anthony Scanlon of Company F, 16th Infantry, an illiterate Irishman but a tough, fearless veteran, attempted to pass on his experience to one of the youngsters. As Scanlon and the young soldier awaited the other section of their patrol, the sergeant saw some men approaching. He whispered, "Them is square-heads. I'll show you how we did it on Mindanao." He took a small piece of white paper, wrapped it around the muzzle of his Springfield so he could see the sight and fired. Unfortunately, the men were the rest of the patrol and he hit a corporal in the hip. The corporal survived. (Coffman 1986: 146)

In combat, friendly fire is always a danger. Although artillery fire that falls short is generally thought of as the most common cause, infantrymen moving with loaded weapons with the safety off and fingers on the trigger can often discharge the weapon, hitting a member of their own unit. Taking a snap shot at a noise at night resulted in many friendly-fire deaths as well. Good training can mitigate friendly-fire incidents but not eliminate them.

The accuracy of the M1903 was greatly appreciated by US soldiers and Marines, and feared by enemy troops. In *The Marine from Manatee*, the biography of Brig Gen William C. Harlee – an ardent advocate of rifle

Rifle grenades

The rifle grenade gives the infantryman the capability of indirect fire using an explosive projectile at a longer range than he could hurl a grenade. Although the rifle grenade first achieved relatively wide usage in World War I, there had been experiments prior to that. The Japanese, for example, had experimented with rifle grenades at the February 1904 battle of Port Arthur during the Russo-Japanese War. In 1907, Martin Hale developed the rod grenade for the British service rifle, a design that would be used up until 1917. The rod grenade could be launched to about 150yd.

Designed in about 1911, the Babbitt rifle grenade was fired from the M1903 by inserting a rod attached to the grenade into the barrel and then firing a special blank cartridge designed to propel the grenade. The distance to which the Babbitt's rod was inserted into the M1903 rifle's bore determined the distance it would travel. The grenade-firing blank cartridge not only propelled the grenade but also armed it by igniting two safety pellets inside the hollow rod. Once these pellets had burned, the grenade's firing pin could function when it hit the ground.

Other prewar grenades launched from the M1903 included the Mk II Tear Gas, Mk I White Phosphorus, and Mk I Smoke. These were also rod grenades that had their rods and blank cartridges packaged separately; hence, the rifle-grenade had to be assembled before firing. These rod grenades were obsolete by the beginning of World War II.

Although there had been a "Sight, Rifle, Grenade Launcher, M1," it was very difficult to properly align for launching a grenade. An experimental clinometer was developed, which combined a base graduated in degrees with a movable spirit level mounted on the left side of the stock. Using a chart, it could be set on the degree of elevation desired then moved until the bubble was leveled (Brophy 1996: 403). Although this device is normally described as experimental, a postwar instance of its use in combat by the US Marines in Nicaragua is recorded.

In 1916 the French VB rifle grenade was patented by two French engineer officers, Jean Vivien and Gustave Bessières. The system used a grenade-launcher that attached to the muzzle of the rifle. The VB rifle grenade was actually launched by firing a live cartridge, the bullet striking a firing-pin system on the grenade as it passed through arming the VB rifle grenade, while the muzzle gases from the fired cartridge expanded into the launcher and



ABOVE An M1903 with M1 grenade-launcher mounted and an M2 Fragmentation grenade with M1 Adapter mounted. Most grenadiers preferred not to fire the rifle from the shoulder if possible, owing to the heavy recoil. (NARA)

projected the grenade. The system, though it worked well with the French 8mm M1886 Lebel rifle, had problems when used with the M1903, among them the splitting of stocks and the loose fit of the VB launchers, which caused premature explosions. As a result, in May 1918, the VB rifle grenade and launcher program for the M1903 were canceled. The VB rifle grenade was redesigned and contracts were signed for provision of over 30,000,000 rifle grenades in anticipation of a massive 1919 offensive. The Mk III launcher was altered so that it would fit either the M1903 or M1917 – whichever it was designed for – much more securely.

BELLOW An M1903 with a VB grenade-launcher mounted; leaning against the rifle is the VB grenade Mk I and a stripper clip of .30-06 ammunition, as the VB used live ammunition to launch the grenade. (NARA)





The best of the US VB launchers was the third type, which locked onto the front sight. Designated the Mk IV, this type of VB grenade-launcher was used with the M1903 and M1917 until declared obsolete in 1939.

Prior to 1940, rifle-grenades of the type used in World War I were the only ones available to US troops. On December 30, 1940, however, a new rifle grenade using a shaped charge was adopted, developed by a Swiss named Henri J. Mohaupt. Fitted with a tail tube, this grenade was designed to fit onto a launcher that extended from the rifle's barrel. As adopted for the M1903, this grenade-launcher was designated the "Launcher, Grenade, M1." Improvements were made in the clamp of the M1 launcher to stop movement that resulted in loss of gas pressure. To prevent the bullet striking the launcher as it exited the bore, care in alignment had to be taken when mounting the launcher. As a result, rifles designated for grenade-launching were normally left with the M1 launcher attached. Along with the M1 launcher, grenadiers were also supplied with a recoil pad, due to the heavy recoil when firing a grenade from the shoulder – something few did more than once. The pad also tended to protect the stock when the grenade was launched with the stock braced on the ground.

ABOVE Firing a M2 Fragmentation grenade using the M1 Adapter in the preferred method, with the butt braced on the ground. (NARA)

Because the M7 grenade-launcher for the M1 Garand was not adopted until March 1943 in many US infantry units, while most infantrymen were armed with M1 Garands, a few M1903 rifles were still on issue for use by rifle-grenadiers until at least 1944. Widely used with the M1 launcher during World War II was the "Cartridge, Rifle Grenade, Cal. .30, M3," which was adopted in September 1941. It could launch the M11A2 Practice grenade to a maximum distance of 260yd. An M7 auxiliary grenade-launching cartridge was adopted in September 1943, which was designed for use in conjunction with the M3 cartridge to give more range.

A much-improved M15 sight was standardized in 1944. It was held in position by attaching it to a mounting plate on the stock. Skilled rifle-grenadiers could deliver their grenades on target very consistently with this sight.

training – it is reported that members of the AEF armed with M1903 rifles had proven deadly against German machine-gun nests by finding positions on the flanks or rear of the Germans and delivering accurate fire to kill the machine-gun crews (Harllee 1984: 231).

Historian Dick Camp describes two squads of Marine riflemen in action against German soldiers of Infantry Regiment 460 during June 1918, at an outpost near Les Mares Farm in the Château-Thierry area:

The outpost was on the forward slope of the knoll where they had good fields of fire. The small group of Marines took the enemy formations under fire with their Springfield rifles. They picked off the enemy scouts and then concentrated on the Germans in the first assault waves. Their accurate fire first surprised, then confused, and finally halted the advance. (Camp 2008: 68)

These Marines of the 55th Company were serving with the 2nd Battalion, 5th Marines, on June 4, 1918. Present at this engagement was Lt Lemuel Shepherd, a future commandant of the USMC. Camp describes how Marine Corps marksmanship training paid off in combat. He quotes a Marine recalling his engagement of the enemy as the Germans advanced towards Les Mares Farm:

“They were so like the silhouette targets at the rifle range at, say, six hundred yards. When glimpsed through the small aperture of a peep sight they were made identical in outline, the chest high figures of men, their head and shoulders rising above the flood of waving grain through which they came.” Hours and hours of practice on the rifle range had made them marksmen, but the targets had been paper; now the silhouettes in front of them were flesh and blood. There was nothing to do but fall back on training: “Target – the half drawn breath – a finger pressure – recoil ... The German staggered and seemed to sag suddenly, wearily, so close that one could see the shock of dumb surprise on [his] face ...” (Camp 2008: 69)

Alfred V. Houde Jr also notes the effectiveness of the M1903 with Marines in France:

On 4 June 1918, in the first major battle for Marines during the war, the Germans advanced through a wheat field in front of Belleau Wood. Marine riflemen stopped the Germans as far out as 800 yards with aimed rifle fire. On that day, the skill of the Marines and accuracy of the M1903 Springfield became legendary. (Houde 2004: 11)

Reportedly, both Marine and Army infantrymen impressed their French allies with their marksmanship. Some French officers were impressed that US infantrymen understood the sights on their rifles and adjusted them to fit engagement distances, even during an advance. Other observers were impressed that US troops knew how to lock-in with their slings to give a more stable shooting platform.



US troops engaging German troops in France with their M1903 rifles during World War I. Note the bandoliers on the man in the foreground, each of which held 12 clips of five rounds of .30-06 ammunition. He is firing from a modified kneeling position to best use cover. (NARA)

US troops often used a rest on the rim of a trench or elsewhere to improve their marksmanship. However, Townsend Whelen notes in *Suggestions to Military Riflemen* that some adjustments to sighting may have to be made when firing from a rest:

On account of the excitement and exertion, it will often be difficult for men to hold their rifle with any degree of steadiness. The best way to overcome the trembling is to rest the rifle on some stationary object. In firing from an entrenchment, it will also usually become necessary to fire in this manner. A rifle shoots much higher when fired from a rest than when held in any one of the prescribed positions. This is on account of the solid rest interfering with the flip or vibration of the barrel. Moreover, a rifle does not shoot as accurately in this way (machine rest excepted) as it does when held in the hands of a man. A rifle will shoot the highest above its normal elevation when the barrel is rested on the object just back of the muzzle, and the difference becomes less as the point of rest approaches the trigger-guard. Solid rests like stone cause the rifle to shoot higher than soft rests like turf. The Krag rifle resting on a sand-bag 6 inches from the muzzle calls for a reduction of about 100 yards in the range. The same point of rest in a Model 1903 arm calls for about a 200-yard reduction. A safe rule is to deduct 150 yards from the range with the 1903 rifle if fired from a rest, and 75 yards with the Krag. Firing from a rest also alters the zero of the rifle, but this may, of course, be disregarded in action, as we are only desirous of exact elevation and a little horizontal dispersion is an advantage rather than otherwise. (Whelen 1909: 224–25)

The most famous American rifleman of World War I was Congressional Medal of Honor winner Sgt Alvin York. Although some reports specify an M1917 Enfield as the rifle York used when he killed 27 Germans with 27 shots (some were with an M1911 pistol), John L. Plaster, a former US Special Forces officer who has trained military snipers and written histories of sniping, points out that the statue of York at the Tennessee state capitol in Nashville shows him with an M1903 rifle. As the statue was designed with York's consultation and he specified that he had used an M1903, evidence for his using the M1903 is compelling (Plaster 2008: 363).

Historian James H. Hallas offers an example of the typical infantryman's preference for the Springfield:

In 1918 many infantry divisions, particularly those formed from the drafted contingents, were armed with the model 1917 rifle; a compromise weapon which enabled our manufacturers to use machinery already set up to turn out rifles for the British forces. The 1917 rifle was the English Enfield changed to permit the use of United States Government ammunition. It was a reliable arm, but heavier, clumsier, and less accurate than our own Springfield. Naturally the soldiers themselves were quick to appreciate the difference, and [later in France] it was no uncommon sight, when men of a new division passed a battlefield salvage dump, to see them run to a stack of scarred and rusty Springfields and leave a new but despised Enfield in exchange for a rifle of older but better pattern. (Hallas 2009: 25–26)

Although most precision shooting with the M1903 was done using the rifle's iron sights, some "snipers" were equipped with Warner & Swasey optical sights for sniping in the trenches. John Plaster points out that the M1913 Warner & Swasey optical sight did offer some advantages, particularly its incorporation of a range-finding reticle and a windage and elevation chart for the .30-06 round (Plaster 2008: 355). At least a few Marine snipers, in some cases former competitive shooters, used their M1903s with Winchester A5 telescopic sights in the trenches as well.

According to Brophy, each World War I US infantry rifle company was allotted 30 VB grenade-launchers on its TO&E, with one for each of 24 grenadiers and six in reserve. This worked out to 360 VB launchers for each regiment. Each regiment was also to have 3,500 Mk I VB grenades on hand (Brophy 1996: 402). It is interesting to note that for firing from the trenches, many US rifle-grenadiers developed a firing rack into which the rifle could be fitted.

AFTER WORLD WAR I

Between the wars, the US Marine Corps continued to see combat, most often in their role of projecting US force in Latin America, China, and elsewhere.

This rifle [the M1903 Springfield] was the standard issue to all Marines from the early days of the 20th century into the first year of World War II. As a result of intensive marksmanship training, an inseparable bond formed between the individual Marine and this rifle which paid dividends on the target range and, later, in combat ... The Model 1903 "Springfield" rifle was first issued Marines in 1908 and saw its first combat during the Nicaraguan Campaign of 1912. The obsolescent Krags were almost entirely supplanted by the new '03 Springfields before the Vera Cruz campaign of 1914. After service in Mexico, Haiti, and the Dominican Republic, the '03 Springfield was exclusively used by Marines serving in

France with the American Expeditionary Force during World War I. Following the war, an improved version was used by Marines in China and in the jungles of the Caribbean Islands and Central America.

The accuracy of the '03 Springfield was without peer, and the Marine Corps based its developing marksmanship program on this rifle. The Marine Corps designed an improved set of front and rear sights and soon led the other services in prowess with the rifle. Indeed, by the outbreak of World War II, the Marine Corps had formed a cult around the rifle. (Shaw 1991: 11)

Although the M1903 had first seen action with the Marines during 1912 in Nicaragua, that was not the last time it was used there. On January 14, 1928, in Nicaragua, US Marines attacked Sandinista forces on El Chipote, where guerillas fired at them from the crest of the hill. Gunnery Sgt Brooks of the 20th Company, 3rd Battalion, 5th Marines reported: "All rifle fire was held up by my orders until the enemy could be seen." Rifle-grenadiers adjusted their special bubble sights and let fly their missiles "where smoke was spitting" (Musicant 1990: 330). This description appears to refer to the rifle-grenade clinometer developed for the M1903 and discussed previously. What is interesting is that these clinometers are usually described as experimental, and no reference is made to their being used operationally. Obviously, however, the Marines had managed to obtain at least a small number for use when launching rifle-grenades. A later clinometer was patented on December 26, 1933, which was marked in yards (rather than meters as the original version had been); it was detachable and designed to fit on the rifle in such a way that its use created less stress on the stock. It does not appear to have been adopted either.

Breaking a Japanese attack on Guadalcanal (overleaf)

US Marines of the 1st Marine Division dug in near the Matanikau River during September 1942 faced an attack from members of the Japanese 4th Infantry Regiment. Fortunately for the Marines, many of the trees have been blasted by artillery and naval gunfire, which allows them to see the Japanese attack forming at some distance. Note that the Marines are armed with the M1903 rifle as their primary weapon. They would not receive the M1 Garand until after Guadalcanal, though some managed to "acquire" them from Army units once they arrived there. The Marines have their bayonets mounted as close combat was common on Guadalcanal, and zeroed their rifles with the bayonet mounted as it affected the harmonics of the barrel, thus affecting accuracy if the sights were not adjusted accordingly. One Marine grenadier prepares to fire a Mk 17 fragmentation grenade at the Japanese from an M1903 mounting an M1 grenade-launcher. Although the M1903 could be fired from the shoulder to launch grenades, recoil was quite noticeable, so most grenadiers preferred to brace the butt against the ground when firing. Marines were trained to fire the M1903 quickly and accurately, but in the mass assaults faced on Guadalcanal they appreciated the advantage an M1 self-loading rifle would grant. They also used Browning Automatic Rifles, Trench Shotguns, and Thompson submachine guns to good effect against mass Japanese assaults.







During the 1920s, Maj A. J. D. Biddle (in jodhpurs and riding boots) trains Marines in close combat with their M1903 rifles and bayonets at the Philadelphia Navy Yard. A pioneer in close-quarters combat techniques and training, Biddle instructed many Marines in close-combat techniques who later trained with W. E. Fairbairn in Shanghai. During World War II he was recalled to duty to help train Marines. (NARA)

Twice during the 1920s the Marines deployed their weapons for use in the USA in response to a series of violent mail robberies (between April 9, 1920, and April 9, 1921, there were 36 major mail robberies with losses of \$6,300,000). As a result, the Marines were assigned to guard the US mail in late 1921 and into 1922. Later, in October 1926, when a new spate of mail robberies occurred, the Marines were once again assigned to guard the mails. The number of Marines involved was quite substantial – 54 officers and 2,208 enlisted men as of November 30, 1921, and 68 officers and 2,452 enlisted men as of December 20, 1926. Although the primary weapons of the Marine mail guards were M1911 pistols and Winchester's M1897 and Remington's Model 10 shotguns, a substantial portion of the Marines were also armed with M1903 Springfield rifles. The Marines were expected to approach guarding the mails with the same "Semper Fi!" attitude they approached other tasks. Secretary of the Navy Edwin Denby sent a message to the mail guards stating:

You must, when on guard duty, keep your weapons in hand and, if attacked, shoot and shoot to kill. There is no compromise in this battle with bandits. If two Marines guarding a mail car, for example, are suddenly covered by a robber, neither must hold up his hands, but both must begin shooting at once. One may be killed, but the other will get the robbers and save the mail. When our Marine Corps men go as guards over the mail, that mail must be delivered or there must be a dead Marine at the post of duty. (Corney 1993)

When the US Army initially adopted the Garand in 1936 the Marine Corps did not. The M1903 was retained as the service rifle by the Corps until late in 1941. Although the Marines had admitted the Garand's advantages when they tested it, it was felt that the superior accuracy of the M1903 allowed the Marines to maximize their effect as riflemen. However, the Japanese mass attacks on Guadalcanal illustrated the advantages of the fast-firing and fast-loading Garand over the M1903.

Tom Bartelson, who enlisted in the Marine Corps in 1940, recalled his initial impressions of the M1903:

... I thought the 03 was a monster! The recoil was so strong. If you didn't hold the rifle tight like we were taught, it would bite you ... I did awful when I first qualified with the 03; I only qualified as marksman. Over time, I eventually qualified as a sharpshooter and eventually as an expert.⁶ The 03 was an extremely accurate rifle; it was good we had it when we had it in World War One and early World War Two.

Back then, you were issued a rifle at Parris Island and it went with you wherever you went. Later they stopped doing that. When we got our rifles, they had been in cosmoline [a waxy rust preventative] since World War One. When you went on liberty, you carried your full sea bag and a rifle. What did you need a rifle for in downtown San Diego? My rifle number was 858123. I kept that same 03 until I became a squad leader and was issued a .45 pistol. (Goodwin 2005: 206)

Bartelson landed on Guadalcanal with the 7th Marines on September 18, 1942. Though he did not have an issue M1903 by this time, he picked one up and used it in combat against the Japanese.

Robert Mort, who enlisted in the Marine Corps in December 1943 and served with the 4th Marine Division, received basic training at the point when the Marines were replacing their M1903s with the M1 Garand:

They had just brought the M1 into the Marine Corps a short time before. Just a few platoons ahead of us had switched to the M1, although we still trained with the 03. I qualified with both the 03 and the M1. I think the 03 was a little bit more accurate, especially at long distances. We shot out to 500 yards on the rifle range. I qualified as an expert with both the 03 and M1. (Goodwin 2005: 38)

Due to a lack of M1 Garands, some Army personnel were armed with the M1903 instead. A number of support troops were issued the M1903 throughout the war. In many cases, they used the M1903 for training but were issued the M1 Garand when they shipped overseas. As late as 1943, there was still a shortage of Garands. Sam Shaw, who went through infantry basic training at Camp McClellan, AL, then served with the 253rd Infantry Regiment (63rd Infantry Division), recalled the issuance of M1903s in 1943 due to shortages of M1 Garands:

In basic, we were issued the M1903 Springfield rifle. The M1s were being sent elsewhere at the time. I never did shoot the 03. We did our rifle training towards the end of our basic training. When we went to the rifle range to qualify, they had enough M1s where they could take

⁶ Of a perfect score of 250 awarded for firing 50 rounds, each worth a maximum total of five points, a score of 190–205 merited the Marksman badge, 206–19 the Sharpshooter badge, and 220–50 the Expert badge



1



2



3



4

Shooting the M1903 Springfield

With the bolt fully open, the stripper clip was inserted into the clip guide and the cartridges were shoved into the magazine (1). The use of the stripper clip allowed much faster reloading capability. It was important to make sure the cartridges were fully inserted into the magazine with the thumb (2); note that the stripper clip remains in the guide. It was not necessary to manually remove it.

Using the palm of the hand for best control and to apply sufficient force, the bolt was shoved forward (3), knocking out the stripper clip as it pushed against it. Not needing to manually remove the stripper clip speeded the process of reloading, which in combat could have meant the difference between life and death. The bolt was pushed forward (4) until the top cartridge was seated in the chamber, then the bolt knob was pushed down smartly with the palm to lock it in place. The bolt handle was designed to allow

us in small groups to qualify with it. Then they would swap the rifles from one group to another. A sergeant would take us off to the side and show us how to operate it, load it, and how to get the clip out. He also showed us how to mash our thumbs real good with the bolt if we didn't get it out of there fast enough. Once I qualified with the M1, they gave me my Springfield back. (Goodwin 2005: 30)

As with many others, Shaw used the M1903 while learning drill and use of the bayonet but qualified with the M1. Some veterans who went through basic training during the first couple of years of the war also received marksmanship training with the M1903 and qualified with it, but received some training with the M1 in addition.

In his classic *Shots Fired in Anger*, Lt Col John George sums up what he found to be the general feeling of troops armed with the M1903 during World War II:

First of all they hated the slow-firing quality of the weapon. Many did mention that its lighter weight [8.7lb; the M1 Garand was 9.5lb] was a point of advantage over the Garand. But at the same time they would bitch



5



6



7



8

quick operation with the palm, which gave better leverage and allowed it to be securely locked in place.

Once the bolt was fully locked in the closed position (5), unless a target was to be immediately engaged, the safety was then rotated to the “on” position. The safety was large enough that it was easily manipulated and clearly marked to show the setting. Experienced troops got used to telling whether the safety was on or off purely from the feel. To prepare for firing, the safety was pushed

to the “off” position with the thumb (6), a movement that could be performed quickly to allow the rifle to be brought into action.

Once the sight was adjusted to the proper range, the rifle could be fired (7). After a round was fired, the bolt was slapped open with the palm and pulled all the way back to eject the spent cartridge (8); it was then pushed forward briskly to chamber a fresh cartridge in preparation for firing once again. The operation of the bolt with the palm allowed faster and surer manipulation.

about the breaking strikers, ill-fit stocks on the older ones, the excessive recoil, the standard uncheckered butt plate on some models. One big complaint was they had to move around between shots to operate the bolt, giving away their location to enemy riflemen. And, of course, there were eternal moans about the mere five shot magazine capacity. Five shots aren’t as good as eight [the capacity of the M1 Garand]. (George 1981: 391)

It is worth noting that enough M1903 Springfield rifles were captured by the Germans that they had a designation for those captured and issued to second-line troops – the Gew 249(a).

The M1903 as a sniper rifle

The M1903 was used for sniping during World War II and Korea. The most commonly used sniping rifle in the Army was the M1903A4. Thor Ronningen, who served in the 99th Infantry Division in France, described his experiences of being trained as a sniper with the M1903 rifle:

After I was assigned to the 99th Division at Camp Maxey [Texas], I was selected to go to a sniper course. There wasn’t any particular reason



A fine example of an M1903A4 sniper rifle with what appears to be an M1907 leather sling; the scope is the M73B1 (Weaver 330C). (Martin Floyd)



A closer view of the M73B1 scope and mount for the M1903A4. (Martin Floyd)

I was selected. You had to have qualified with your weapon as at least a marksman or a sharpshooter, but I don't know how we were selected. It seems they only chose two or three men from the company to attend the course. The course was about two weeks long at the most. We trained with the 03 Springfield with a Weaver scope. It wasn't a very strong scope from what I remember. I think it was only four power. The 03 was a good weapon. Most of the sniper training was very similar to the marksmanship training we had done, shooting on the known distance range. We did some range estimation training and fired out to 400 or 500 yards, which in most cases was pretty ridiculous. They very perfunctorily covered stalking and hiding during the course. The majority of the course was basic marksmanship. (Goodwin 2005: 69)

From Ronningen's description of his rifle and scope, he was issued an M1903A4 with an M73B1 scope.

Always willing to give his opinion of weapons in combat, Lt Col John George offered a list of complaints against the M1903 sniper rifle as used in World War II:

Specific complaints against the M-1903 sniper rifles are as follows: (1) Scope insufficiently rugged and shock proof; (2) Scope optically inadequate – not enough luminosity; (3) Scope adjustments insufficiently foolproof and rugged; (4) Location and design of mount precluded clip loading – a serious defect on any military weapon; (5) No auxiliary iron sights; (6) Rifle insufficiently accurate. (George 1981: 392)

John Plaster points out that, in many units during World War II, there was no attempt to train snipers or select marksmen with some aptitude. There were exceptions, however. For example, during the fight for Monte

Cassino, PFC James McGill of the 34th Infantry Division eliminated a German machine-gunner who had pinned down his platoon at 600yd (Plaster 2008: 385). Although the 34th Infantry Division was a National Guard division, it drew from the US Midwest, where many of the Guardsmen had grown up hunting. It also saw 517 days of frontline combat during World War II so was a veteran unit.

Plaster relates another incident that showed the value of a skilled marksman with an M1903A4:

One of the war's most amazing long-range shots was made by an American officer at Italy's Anzio beachhead. Through binoculars, he spotted two Germans sneaking along a drainage ditch toward an American patrol. One carried a submachine gun; the other had his jacket crammed with grenades. "If those Jerries weren't stopped," he realized, "the squad ahead of them might be wiped out." Taking a prone position, he shouldered his scoped 1903A4 Springfield and carefully adjusted for great range – 800 yards, he estimated. Taking aim at the leading German, he squeezed and – to his amazement – he blew [sic] to kingdom come! *His bullet had hit a grenade*, according to a war correspondent instantly killing both enemy soldiers. (Plaster 2008: 398)

Officers with marksmanship experience themselves appreciated the value of the M1903 sniping rifle and skilled shooters. Col Sidney Hinds of the 41st Armored Infantry Regiment had been a prewar competitive shooter who had won a gold medal at the 1924 Olympics. He carefully selected the best marksmen under his command and sent them through his own five-week sniping school (Plaster 2008: 386). The snipers were equipped with the M1903A4 rifle. Snipers from the 41st Armored Infantry proved invaluable in eliminating a German machine-gun crew and taking the crew of an 88mm gun under fire during the advance through the San Giuseppe Pass on Sicily in July 1943 (Plaster 2008: 397).



This US Army sniper in Italy, 1944, is armed with an M1903A4 sniper's rifle fitted with an M73B1 scope. (NARA)





Sniper in Cherbourg, June 1944 (previous pages)

Although the sniping rifle was extremely useful for long-range shots over open ground, it could also be very handy in urban combat to either delay advancing troops or in the countersniper role. In this case, a US sniper from the 4th Infantry Division engages a German sniper hidden in a doorway, who is holding up the advance down a Cherbourg street. The US sniper is firing from the kneeling position using a pile of rubble for cover. His weapon is the US M1903A4 sniping rifle based on the M1903A3 rifle. The rifles were not selected for accuracy and mounted only a 2.5x telescopic sight, but were still more effective for longer-range shots than the standard M1 or M1903 rifle. One disadvantage of the M1903A4 was that the scope precluded the use of five-round stripper clips and forced the sniper to load individually.

He wears the Parsons jacket and Herring-Bone Twill pants with canvas leggings and M1 helmet and the M1 Garand cartridge belt, which could also be used to hold two five-round M1903 stripper clips instead of one eight-round Garand clip in each pocket. The US sniper would most likely keep the rounds carried in the belt on stripper clips but would have removed ten or 15 rounds and placed them in a pocket for easy access when single loading.

The German he is engaging may not be a trained sniper armed with a scoped Mauser sniping rifle, but just a German infantryman using his rifle to slow the US advance out of the Normandy beachhead. There were actually few trained German snipers in action on the Western Front at this time.

In fact, US snipers armed with M1903A4 rifles made an important contribution during the fighting in the mountainous terrain of Sicily, owing to their weapons' accuracy at longer ranges.

US snipers proved valuable in the Pacific as well. In September 1942, the Marines created a sniper school on Guadalcanal to train two Marines from each rifle company. Sniper schools were also established for the Marines in the USA on each coast – Camp Pendleton, CA, and Camp Lejeune, NC – employing skilled Marine competitive shooters as instructors. It helped in establishing USMC sniper training that many ranking officers were themselves recipients of the Marine "Distinguished Rifleman" award. Among the especially interesting Marine sniping units were those comprised of scout-snipers trained as dog-handlers and equipped with M1903s (whereas many other Marine dog handlers had M1 Carbines or Trench Shotguns). Each scout-sniper was partnered with a trained Marine war dog to hunt and eliminate Japanese. The scout-sniper training was considered valuable for scout dog-handlers, as it prepared them to move quietly through the jungle with their war dog; however, should the dog spot a Japanese at some distance, the sniper training would allow the Marine to eliminate the enemy. It is not clear whether any of the scout-sniper dog-handlers actually carried a sniper rifle or just used their standard rifle.

Early in World War II, Marine snipers were equipped with the M1903A1 National Match rifle with Lyman 5A scope. Although the National Match Springfield continued in use, the Lyman 5A scope was replaced by the 8x Unertl from January 1943. Marines found that the Unertl scope did not stand up well to the rugged combat conditions in the Pacific, however. As a result, in February 1944 the Marines adopted the M1903A4 with the Army's Weaver 330C scope.

POSTWAR USE

During World War II, Free French forces equipped by the USA used the Springfield, as did the Brazilian 1st Infantry Division serving with the Allies in Italy. It can be presumed that some of these continued in service after the war. However, in the case of the Brazilians, since their country's service rifle was the Mauser M1908 in 7×57mm, the incompatible chambering of the M1903 meant they are likely to have returned them to the USA. In the early postwar years, Greek troops fighting against Communist insurgents (1946–49) were equipped with the M1903. During the Chinese Civil War (1946–50), Springfield rifles were used by both the Nationalists and the Communists, though it was not a primary weapon for either.

Elsewhere in Asia, the Cambodians used the M1903 from 1950 to 1975, at which point the Khmer Rouge took power. The US-sponsored Philippine Army and Constabulary had used the M1903 since 1912 and continued to use it until 1951. The '03 served during the first years of the Huk Insurgency (1946–54), but was replaced in 1951 by the M1 Garand. During World War II, Thailand was supplied some M1903 rifles, which seem to have remained in service with some special police units until the late 1960s or early 1970s. When the French withdrew from Indochina they supplied some M1903 and M1903A3 rifles to the forces of the Republic of Vietnam. Most of these were replaced once the US became heavily involved in Vietnam by M1 Garands, M1 Carbines, and later by M16 rifles.

During the Cuban Revolution (1953–59) a number of Castro's revolutionaries were equipped with M1903 Springfields. In fact, one '03 Springfield was used in the July 26, 1953, attack on the Moncada Barracks, which is often considered the beginning of the Cuban Revolution. At least some M1903 Springfields were also used by Cubans who took part in the Bay of Pigs Invasion. Reportedly, at least one '03 sniper rifle was intended to be used to assassinate Castro by a Cuban dissident group, but it is unclear if it was ever smuggled to them. Prior to the Revolution, the Cuban Army had used M1903 rifles from 1923 to 1947, when they were replaced by M1 Garands.

Many M1903, M1903A1, and M1903A3 rifles were supplied to US allies during, and immediately after, World War II. Others have been sold to US shooters through the DCM and NRA. M1903 rifles of various types remained in use with ROTC (Reserve Officer Training Corps) units and with various drill teams, and M1903A4 sniping rifles continued in use until at least the Vietnam War.



IMPACT

A fine rifle; a lasting caliber

THE M1903 VERSUS THE M1917

There were many more M1917s produced during World War I than M1903s. It is interesting to note, however, that in *America's Munitions, 1917–1918*, it is admitted that the M1917 was chosen as a matter of expedience and was considered inferior to the M1903:

The story of the modified 1917 Enfield, which was the rifle on which the American Expeditionary Forces based their chief dependence, is an inspiring chapter in our munitions history. To get this weapon we temporarily forsook the most accurate Army rifle the world had ever seen and straightway produced in great quantities another one, a new model that proved itself to be almost, if not quite, as serviceable for the kind of warfare in which we were to engage ... (Crowell 1919: 177)

In this report, Assistant Secretary of War Benedict Crowell goes on to laud the M1903's accuracy:

America, since the days of Daniel Boone a nation of crack shots, was naturally the home of good rifles. Hence, perhaps, it is not surprising that the United States should be the nation to produce the closest shooting military rifle known in its day. This was the United States rifle, model of 1903, popularly called the "Springfield" ... in 1903 we brought out the Springfield, the most accurate and quickest firing rifle that had ever come from an arsenal. There was no questioning the superiority of the Springfield in point of accuracy. Time after time we pitted our Army shooting teams against those of other nations of the

earth and won the international competitions with the Springfield ... Altogether the Springfield rifle defeated the military rifles of 15 nations in shooting competitions prior to the war, and in 1912, at Ottawa, an American team firing Springfields set marksmanship records for 800 yards, 900 yards, and 1,000 yards that have never been broken. (Crowell 1919: 177–78)

Assistant Secretary Crowell praises the M1903 in order to make the point that all involved in armaments production realized that it was a superior weapon, but he then goes on to explain the necessities of equipping a rapidly burgeoning army with rifles, which resulted in the speedy conversion of the Enfield to .30-06 caliber and its production in quantity. During World War I, 312,878 M1903 rifles were produced, compared to 2,193,429 M1917s (Crowell 1919: 183). Had the USA chosen to convert the plants that produced M1917s to production of M1903s, the delay would have been such that the American Expeditionary Forces (AEF) would have suffered a severe shortage of rifles.

In discussing the M1903 and the M1917, Crowell also notes that the Ordnance Department compared the two US rifles to captured German Mauser rifles and found the US rifles more accurate and faster firing. Accuracy was attributed to the .30-06 cartridge, as well as the better finish of the chamber and bore on American rifles, and rapidity of fire to the more ergonomic shape of the bolt on the M1903 and the M1917 (Crowell 1919: 184).

National Guardsman Charles B. Winder, a well-known rifle shot, fires the M1903 from the seated position in 1911. This position allowed a very steady hold and got the shooter lower than standing, but required less space than the prone position. As a result, a wide array of cover could be used when assuming this position in combat. Note the spotting telescope and Winder's M1905 rear sight. (Library of Congress)





A Griffin & Howe M1903
Springfield. (National Firearms
Museum, NRAmuseum.com)

THE .30-06 IN MILITARY USE

The .30-06 round continues to have a military influence today. The 7.62×51mm NATO round was based on the .30-06 cartridge case, though shortened so that it would function more reliably in self-loading battle rifles. Although many of the widely used 7.62×51mm rifles such as the FN FAL, HK G3, and US M14 have been replaced in many armies, they still see substantial use. Designated marksman rifles⁷ chambering the 7.62×51mm round have seen very effective deployment in Afghanistan and Iraq. Additionally, many sniper rifles still chamber the 7.62×51mm round. The civilian version of the 7.62×51mm NATO round – the .308 Winchester – has proven a popular sporting round in the USA as well.

THE M1903 AS A SPORTING RIFLE

A widespread influence of the M1903 US military rifle was on US sporting rifles. The famous rifleman Townsend Whelen commented on the M1903 and its development for hunting use:

About 1909 the more skilled and studious of our hunter-riflemen became aware that they could shoot with far better accuracy, and hit surely at far longer ranges, with our Springfield Model 1903 Service (Military) Rifle than with any hunting or sporting rifle regularly manufactured at the time. Accordingly some of us proceeded to have these weapons remodeled into sporting type, this remodeling consisting of replacing the military stock with a sporting one with pistol grip, more refined lines, and proper dimensions, replacing the military sights with Lyman hunting sights and perhaps a telescope sight, and smoothing and bluing the rough military barrel. (Whelen 1940: 55–56)

⁷ Whereas sniper rifles are designed for trained snipers who have been through full sniper training, the DMR is intended for good shooters who are still regular infantrymen but armed with more accurate rifles to allow accurate engagement at longer range during firefights. In combat they sometimes perform the sniper mission



An elaborately engraved Griffin & Howe custom Springfield, fitted with a Zeiss Zielklein scope. This example belonged to the noted sportsman and competitive shooter Col Edward C. "Jim" Crossman, author of *The Book of the Springfield*. (National Firearms Museum, NRAmuseum.com)



Since the M1903 was only available to civilians through the DCM, it would certainly be more convenient if it could be ordered in a “sporting” version directly. Once the .22 M1922 became available, some shooters expressed an interest in using the pistol-grip stock of the M1922 with a .30 service-rifle action. Yet, as the .30 heavy barrel had a slightly larger diameter than the .22 barrel, it was necessary to produce a .30-caliber barrel with the same outside dimensions as the .22 barrel to satisfy this demand. Initially, the DCM would fit the new .30 barrels to .30 actions sent by the owner and supply them with the M1922 stock. The next logical step was offering a “sporter” version built at Springfield Armory.

Availability of the new rifle was announced in 1924 as the “Rifle U.S., Caliber .30, Model of 1903, sporting type, star-gauged, fitted with Lyman No. 48 receiver sights.” Many shooters just called it the “NRA Sporter.” The rifles were made to National Match specifications and generally shot as well as or even better than a National Match M1903. These sporting rifles were listed in the DCM sales lists between 1925 and 1932. The price in 1925 was \$49.50 (\$645.71 in 2012⁸), though by 1932 it had dropped to \$42.50 (\$557.62 in 2012, perhaps due to Depression-era monetary deflation; a 1932 dollar was actually worth more than a 1925 one. (Brophy 1996: 210). Certainly, the NRA Sporter is so valued by collectors today that they would gladly pay the modern equivalent price for one.

A total of 5,538 NRA Sporters were built, and they were considered among the finest rifles available to American sportsmen at the time. According to Brophy, they were only discontinued because of criticism of the Ordnance Department for competing with civilian firearms manufacturers. This criticism may have arisen from lack of work at commercial manufacturers during the Depression. A few continued to be assembled prior to World War II to be awarded as shooting-competition prizes, however.

A few gunmakers became well known for producing custom sporting versions of the M1903. Among these was Griffin & Howe of New York. Seymour Griffin became interested in building sporting rifles based on the M1903 after reading Theodore Roosevelt’s book *African Game Trails* in which he discusses using his Springfield M1903 but wishes it had a better sporting stock. In 1910, Griffin purchased a piece of French walnut and shaped and inlet it to take the M1903 rifle he owned. He continued to work as a cabinet-maker who made custom stocks as a sideline until 1923, when he joined forces with James W. Howe, the foreman of the machine shop at Frankford Arsenal in Philadelphia, PA. Although Howe was only part of the Griffin & Howe business for four months his name remained. In the 1929 Griffin & Howe catalog, the company describes its “.30/06 Sporting Springfield”:

The .30 caliber Model 1906 cartridge is unquestionably the most accurate and reliable cartridge ever produced. All long-range records have been made with it. It is without doubt the best all-around cartridge for American big game shooting, and for this continent we unquestionably recommend it above any other ...

... For all-around work, particularly long-range work, rifles should have 24-inch barrels and should weigh about 8 pounds. For eastern woods shooting, and for hunting on horseback, shorter and lighter rifles are very convenient, and with this cartridge are accurate and effective with barrels as short as 20 inches and as light as 7½ pounds.

The Griffin & Howe remodeled Springfield rifle is the most popular arm we make to handle this cartridge ... (Anon 1929: 8)

In addition to those in .30-06 caliber, Griffin & Howe also made Springfield sporting rifles in .25 h.p. (.30-06 “necked down” to .25 caliber; “h.p.” stands for “High Power”), 7mm, .35 Whelan, and .400 Whelan. However, the vast majority were in .30-06 Springfield. As an aid to customers in obtaining an M1903 upon which to base a sporting rifle, in their 1929 catalog Griffin & Howe had a section on how to order a rifle through the DCM.

Equally well known for M1903 sporting rifles was R. F. Sedgley, Inc. This firm offered an even wider array of rifles based on the M1903 action. In the 1937 *Sedgley Handbook* various Sedgley-built Springfield sporting rifles are listed. The most expensive was the deluxe model, which sold for \$165, \$176, or \$205 depending upon caliber. Among the “deluxe” features were a Circassian walnut stock with cheek piece and finely checkered pistol grip and forend; buffalo-horn tip; engraved buttplate and pistol grip cap; fine line engraving on barrel, breech, muzzle, trigger guard, and floor plate, the floor plate including a hunting scene; “checked” bolt knob; and chrome-plated bolt and firing pin. An M1903 Springfield action was used, but with a special select barrel (selected for precision in manufacture) in Springfield contour. Sights were the Lyman 48 rear sight with ivory- or gold-bead front sight mounted on a matte ramp with sight guard.

The standard Sedgeley Springfield Sporter without all of the “deluxe” features sold for \$71, \$82, or \$100 depending on caliber. Most of the features deleted on the standard version were cosmetic, as it still had the Lyman 48 rear sight with gold- or ivory-bead front sight mounted on a matte ramp with sight guard. Even the most basic Sedgeley Sporter was quite expensive. A standard version in .30-06 caliber that sold for \$71 would be equal to \$1,111.55 in 2011.⁹ Given that the USA was still in the Great Depression, only affluent sportsmen could afford a Sedgeley-custom Springfield.

Although the Griffin & Howe catalogs do not specify the Springfield action used on their custom rifles, some experts – including Roy F. Dunlap, who updated *The Book of the Springfield* – believed that, for sporting rifles, the nickel-steel actions were the best choice (Crossman 1951: 34). Calibers available for the Sedgeley Sporter were .270; .250-3000; .22 “Hornet”; .219 Zipper; .220 Swift; .25 Roberts; .25-35; .30-06; 7mm; and .300 Magnum. The .300 Magnum (.300 H&H Magnum) was the most expensive, with .25-35, .30-06, and 7mm the least expensive. The standard weight for the deluxe and standard rifles with 24in barrels

⁹ Information derived from <www.dollartimes.com>



A custom M1903 rifle built by Fred Adolph for Townsend Whelen. (National Firearms Museum, NRAmuseum.com)

was 8.25lb. For an additional \$10, a Featherweight version weighing 7.25lb was available. Sedgeley also built Springfield Sporters with a left-handed action to the same specs as the standard model, but at \$121 or \$132 depending on caliber; .300 Magnum was not offered in the left-hand version. Another option for Sedgeley Springfield Sporters was to have a telescopic sight mounted: Hensoldt, Zeiss, and Noske scopes were offered at prices from \$50 to \$94.

Since Sedgeley was building custom rifles using the Springfield action, the company also made some “improvements” to basic military design, including a safety firing pin that could not be blown back into the shooter’s face if a case ruptured and a “speed action” that shortened operating time by 40 percent for faster repeat shots. The improved firing pin was designed to correct many of the major criticisms of the M1903 design. The M1903’s two-piece firing pin had been designed to allow easier replacement under combat conditions, but, in actuality, it made the firing pin more prone to breakage.

Both Griffin & Howe and Sedgeley rifles were offered for sale by the prestigious New York dealer Abercrombie & Fitch, Co. From the 1933 Abercrombie & Fitch gun catalog, it appears that the company kept a certain number of Sedgeley rifles in stock for immediate customer purchase, but also arranged to order other Sedgeley Springfields or Griffin & Howe Springfields to their customers’ specifications.

Other well-known custom rifle makers who used the M1903 as the basis for sporting rifles were Fred Adolph and Louis Wundhammer. Today, Springfield sporting rifles built by any of these custom makers are highly sought after by collectors, though many are still used for sporting purposes by descendants of the original owners or others who have acquired them since.

The .30-06 as a sporting cartridge

As has already been mentioned, one of the great advantages of the Springfield as a sporting rifle is its very accurate ammunition. The design of the .30-06 case allows for the loading of bullets of varying weights, with 110-grain bullets available for hunting smaller game or 220-grain bullets available for larger, more dangerous game. Loadings in between have been used for a variety of game as well. In fact, in *The Book of The Springfield*, Crossman lists ten distinct types of bullets available in the .30-06 cartridge for “game killing” (Crossman 1951: 40). Of great appeal for sportsmen using Springfield sporting rifles after World War I was the ready availability of inexpensive surplus military ammunition for practice use with their rifles. One recommendation for the .30-06 cartridge is the number of other manufacturers who have chambered rifles for the cartridge over the years, including some of the best-known English and German gunmakers.

However, despite the advantages of the .30-06 caliber, when Theodore Roosevelt ordered a Springfield Sporter to be made for him in November 1903 (serial number 6000), it was in the then-standard .30-03 caliber. He would eventually take over 300 head of game with this rifle. Later, in 1908, Roosevelt had Springfield Armory build another Springfield Sporter. It is not clear if it was in .30-03 caliber to match his earlier rifle or in .30-06 caliber, which was by then the standard service chambering. Since Roosevelt did not have the original rifle re-chambered to .30-06, however, he may have ordered the companion rifle in that chambering as well for ammunition compatibility; as the .30-03 is longer than the .30-06, a .30-03 round will not chamber in a .30-06 rifle. In 1909, for his trip to Africa, Roosevelt also ordered a M1903 Springfield fitted with a Maxim silencer from Gen W. Crozier of US Army Ordnance. As information about ammunition packed for shipment to Africa refers to “.30 Govt. full metal patched cartridge,” it appears that the suppressed M1903 was in .30-06 caliber (Wilson 2009: 251). Today, the .30-06 cartridge remains one of the most widely used sporting cartridges in the USA. Most major manufacturers of bolt-action sporting rifles have chambered their rifles for the .30-06 cartridge and still do.

Hunting with the Springfield

Because of the M1903’s popularity as a sporting rifle, it also saw extensive use against a wide variety of game. One of the greatest advocates of the M1903 as a military rifle and as a sporting rifle was President Theodore Roosevelt. For example, on his 1908 safari to East Africa, Roosevelt spotted two Eland bulls:

The ground was too open to admit the possibility of a stalk; but leaving my horse and the porters to follow slowly, the gun-bearers and I walked quartering toward them. They hesitated about going and when I had come as close as I dared, I motioned to the two gun-bearers to continue walking and dropped on one knee. I had the little Springfield, and was anxious to test the new sharp-pointed military bullet on some large animal. The biggest bull was half facing me, just two hundred and eighty yards off; I fired a little bit high and a trifle to the left; but the tiny ball broke his back and the splendid beast, heavy as a prize steer, came plunging and struggling to the ground. The other bull started to run off but after I had walked a hundred yards forward he actually trotted back towards his companion; then halted, turned, and galloped across my front at a distance of a hundred and eighty yards; and him too I brought down with a single shot. The little full-jacketed, sharp-pointed bullet made a terrific rending compared with the heavier, ordinary shaped bullet of the same composition. (Roosevelt 1988: 190–91)

The “sharp-pointed bullet” to which Roosevelt refers appears to be the .30-06 150-grain spitzer bullet. Roosevelt did not find that the .30-06 Springfield did as well on rhino:

At last Bakhari, the gun-bearer, pointed to a grey mass on the plain, and a glance through the glasses showed that it was a rhino lying



Theodore Roosevelt on safari in Africa in 1910. His rifle is a sporting M1903 specially made for him by Springfield Armory.
(Library of Congress
LC-USZ62-62159)

asleep with his legs doubled under him. He proved to be a big bull, with a front horn nearly twenty-six inches long. I was anxious to try the sharp-pointed bullets of the little Springfield rifle on him; and Cunningham and I, treading cautiously, walked upwind straight towards him, our horses following a hundred yards behind. He was waked by the tick-birds and twisted his head to and fro, but at first did not seem to hear us, although looking in our direction. When we were a hundred yards off he rose and faced us, huge and threatening, head up and tail erect. But he lacked heart after all. I fired into his throat, and instead of charging, he whipped round and was off at a gallop, immediately disappearing over a slight rise. (Roosevelt 1988: 212–13)

Roosevelt mounted his horse and galloped after the rhino and emptied the Springfield's magazine twice at the rhino's quarters and flank. Eventually, he overtook the rhino:

This time he wheeled and faced round, evidently with the intention of charging, but a bullet straight into his chest took all the fight out of him, and he continued his flight. But his race was evidently run and when I next overtook him I brought him down. I had put nine bullets into him; and though they had done their work well, and I was pleased to have killed the huge brute with the little sharp-pointed bullets of the

Springfield, I was confirmed in my judgment that for me personally the big Holland rifle was the best weapon for heavy game, although I did not care as much for it against lighter-bodied beasts like lions. (Roosevelt 1988: 213)

Note that Roosevelt's Holland & Holland double rifle was a .500/.450. For use against dangerous game, a 220-grain, full-metal-jacketed .30-06 bullet was later developed and has even been used to take elephant. However, on the 1908 safari, Roosevelt used the 150-grain .30-06 spitzer bullet – on at least one occasion for a brain shot on a wounded elephant.

Another well-known hunter who used the M1903 Springfield extensively was Stewart Edward White, who used the Springfield on various plains game at distances out to 300yd. In fact, White got only the second Springfield Sporter to have been made (Theodore Roosevelt had gotten the first) and took it to custom stock-maker Ludwig Wundhammer to be restocked. During two trips to Africa, one in 1910 and another in 1912, White killed 346 head of game with the Springfield.¹⁰ In an appendix to *The Land of Footprints*, which describes one of his safaris, White goes into some detail about his Springfield rifle:

For the benefit of the sportsman and gun crank who want plain facts and no flapdoodle, the following statistics are offered. To the lay reader this inclusion will be incomprehensible; but I know my gun crank as I am one myself!

Army Springfield, model 1903 to take the 1906 cartridge, shooting the Spitzer sharp point bullet. Stocked to suit me by Ludwig Wundhammer, and fitted with Sheard gold bead front sight and Lyman aperture receiver sight. With this I did most of my shooting, as the trajectory was remarkably good, and the killing power remarkable. Tried out both the old-fashioned soft point bullets and the sharp Spitzer bullets, but find the latter far the more effective. In fact the paralyzing shock given by the Spitzer is almost beyond belief. African animals are notably tenacious of life; but the Springfield dropped nearly half the animals dead with one shot; a most unusual record, as every sportsman will recognize. The bullets seemed on impact always to flatten slightly at the base, the point remaining intact to spin widely on the axis, and to plunge off at an angle. This action of course depended on the high velocity. The requisite velocity, however seemed to keep up within all shooting ranges. A kongoni [antelope] I killed at 638 paces (measured) [532yd], and another at 566 paces [472yd] both exhibited this action of the bullet. I mention these ranges because I have seen the statement in print that the remaining velocity beyond 350 yards would not be sufficient in this arm to prevent the bullet passing through cleanly. I should also hasten to add that I do not habitually shoot at game at the above ranges; but did so in these two instances for the precise purpose of testing the arm. (White 1913)

10 See "Petrov's Pages" at <finegunmaking.com>

White found that careful cleaning routines paid dividends in terms of accuracy:

Metal fouling did not bother me at all, though I had been led to expect trouble from it. The weapon was always cleaned with water so boiling hot that the heat of the barrel dried it. When occasionally flakes of metal fouling became visible a Marble brush always sufficed to remove enough of it. It was my habit to smear the bullets with mobilubricant before placing them in the magazine. This was not as much of a nuisance as it sounds. A small tin box about the size of a pill box lasted me the whole trip; and only once did I completely empty the magazine at one time. On my return I tested the rifle very thoroughly for accuracy. In spite of careful cleaning the barrel was in several places slightly corroded. For this the climate was responsible. The few small pittings, however, did not seem in any way to have affected the accuracy, as the rifle shot the following groups: 3-½ inches at 200 yards; 7-¼ inches at 300 yards; and 11-½ inches at 500 yards ... It shot one five-shot 1-⅓ inch group at 200 yds., and several others at all distances less than the figures given, but I am convinced these must have been largely accidental.

These groups were not made from a machine rest, however; as none was available. The complete record with this arm for my whole stay in Africa was 307 hits out of 395 cartridges fired, representing 185 head of game killed. Most of this shooting was for meat and represented also all sorts of "varmints" as well. (White 1913)



CONCLUSION

The M1903 Springfield ranks as an important weapon in US military history. It was the last generally issued bolt-action US service rifle, and it was the rifle with which US troops entered World War I, though more were eventually armed with the M1917 Enfield than the M1903 Springfield. During its time it was generally conceded to be the most accurate military rifle in the world, and US military and civilian marksmen won many important competitions with it. It continued in service during World War II to make up the shortfall in M1 Garand production and for launching rifle-grenades, until a launcher was developed for the M1 Garand. It served in World War II and Korea – even Vietnam – as a sniper's rifle, though not a very good one.

However, the M1903 was still basically a variation of several models of Mauser rifle that had served in various armies for decades; arguably the M1903 was an improved version, but still a five-shot bolt-action rifle. Far more important in the development of infantry rifles was the M1 Garand, which replaced the Springfield. The Garand gave the US infantryman a fast-firing, fast-loading combat rifle, which provided him with a distinct advantage on the battlefield. The Garand changed the paradigm for the infantry rifle and laid the groundwork – along with the German Sturmgewehr – for the modern battle rifle.

Still, even in World War II, the M1903 had the cachet of having been used by the US Marines during their epic battle for Guadalcanal. It didn't offer the rapid firepower of the Garand, but still proved superior in range and accuracy to the Japanese Arisaka rifle. The M2 Ball round could shoot a 5in group at 200yd and was designed for use to 1,000yd; the 139-grain 6.5×50mm Arisaka round had a muzzle velocity of 2,500fps, as opposed to the 151-grain M2 Ball round with a muzzle velocity of 2,805fps, meaning the .30-06 offered longer range and greater striking power than its Japanese equivalent. It should be pointed out that the 6.5mm Arisaka round almost matched the British .303 for bullet drop at

300yd (19.9in for the 6.5mm round versus 20.0in for the .303). At 500yd and 800yd the difference in performance of the .30-06 was more pronounced. However, the .30-06 bullet only dropped 16.4in at 300yd. It should be noted, however, that in tests carried out after World War II by P. O. Ackley, a well-known ballistics expert, the Type 38 Arisaka action proved to be the strongest of any World War II-era bolt-action rifle (Bodinson 2004).

For many, the fact that the M1903 was used by the US Marines in China and in the Banana Wars gives it a certain appeal as well. Certainly, the author has enjoyed handling a Springfield from the 1920s and picturing himself with the 4th Marines on the barricades around the International Settlement in Shanghai.

In many ways, the Springfield's .30-06 cartridge was more influential than the rifle itself, as the Browning Automatic Rifle and Browning M1917/M1919 machine guns, as well as the M1 Garand, were chambered for the .30-06. The .30-06 cartridge also provided the basis for the 7.62×51mm NATO round (and the civilian equivalent, the .308 Winchester). The M1903 became a popular hunting rifle quite early in its

Soldiers of the US Army on Okinawa, 1945, with two of the five types of .30-06 weapons to see service during World War II. They are armed with M1903 rifles and BARs (Browning Automatic Rifles); it is interesting that this late in the war Army troops are still using M1903s. (NARA)



existence, being given the stamp of approval by Theodore Roosevelt among others, and the .30-06 round remains one of the most popular American hunting cartridges today. In fact, the .30-06 still ranks among the top three American big-game-hunting cartridges.

As a result, one of the things that makes the hunt for collectible M1903 rifles more challenging is that so many of them have been “sporterized” over the years, converting them from military configuration to rifles more suitable for hunting. Once withdrawn from US service, many M1903 and M1903A3 Springfields were supplied to US allies. Some of those eventually came back to the USA and were sold through the Civilian Marksmanship Program. Most were not in collectible condition, however.

As a result, even though somewhere around 3,400,000 (because of variations in records and other discrepancies total production may have been a bit higher or lower) M1903, M1903A3, and M1903A4 rifles were produced, collectible examples can be hard to find today and bring good prices. Especially collectible rifles, such as an original unaltered early rifle with the rod bayonet or one with the Pedersen Device, can bring tens of thousands of dollars. The use of corrosive ammunition in many Springfields over the years has also diluted the pool of rifles with original barrels (or original barrels without corrosion) and otherwise lessened the number of fine rifles available for collecting.

The first US military rifle owned by the author was an M1903 Springfield. In retrospect, it was probably one he should have kept as it was a World War I-era rifle unaltered and in fine condition. Alas, it was owned while the author was an undergraduate and money was short, so it was traded away within a few months. Still, the author had shot it enough to appreciate that it was quite an accurate rifle.

Working on this book has been enjoyable for the author as it has allowed him to become reacquainted with the Springfield. During the months he has worked on this book, his M1903 and M1903A3 rifles have leaned in the corner near the desk. The bolts and safeties have been worked dozens of times as points related to manipulating the rifle have been pondered. The sights have been adjusted and, yes, a few photographs on the walls have been “acquired.” Work on this book has also offered a chance to shoot the Springfield for the first time in more than a decade. Researching and writing about the Springfield has also caused the author to remember his father, who served in World War I and between the wars, and was always armed with the M1903 Springfield.

The Springfield was developed for the soldiers of a country that, at the time, still considered itself a nation of riflemen. The assumption was that US infantrymen could be trained to shoot it well and, for the most part, that was true. Its reputation in World War I – especially with the US Marines, who have always considered every member of the Corps a rifleman – was stalwart and deserved.

Today in the USA many younger shooters don’t really know about the M1903 Springfield, nor care. They have grown up with the idea that a military rifle has to be an assault rifle. But many older shooters still appreciate the Springfield; it is an important piece of US martial history, and a fine rifle.

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OSPREY
PUBLISHING

First published in Great Britain in 2013 by Osprey Publishing,
Midland House, West Way, Botley, Oxford, OX2 0PH, UK
43-01 21st Street, Suite 220B, Long Island City, NY 11101, USA
E-mail: info@ospreypublishing.com

Osprey Publishing is part of the Osprey Group

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A CIP catalog record for this book is available from the British Library

Print ISBN: 978 1 78096 011 1

PDF ebook ISBN: 978 1 78096 013 5

ePub ebook ISBN: 978 1 78096 012 8

Index by Fionbar Lyons

Typeset in Sabon and Univers

Battlescenes by Steve Noon

Cutaway by Alan Gilliland

Originated by PDQ Media, Bungay, UK

Printed in China through Worldprint Ltd

13 14 15 16 17 10 9 8 7 6 5 4 3 2 1

Osprey Publishing is supporting the Woodland Trust, the UK's leading woodland conservation charity, by funding the dedication of trees.

Acknowledgments

The author would like to thank the following for assistance in the preparation of this book: Martin Floyd, Tom Knox, Gina McNeely, T. J. Mullin, Rock Island Auction Service, Springfield Armory National Historic Site, the US National Archives and Records Administration, and the US Marine Corps Museum.

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For ease of comparison please refer to the following conversion table:

1 mile = 1.6km
1yd = 0.9m
1ft = 0.3m
1in. = 2.54cm/25.4mm
1 gallon (US) = 3.8 liters
1 ton (US) = 0.9 metric tons
1lb = 0.45kg

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